PERMIT RENEWAL AND SIGNIFICANT REVISION APPLICATION

ADEQ CLASS I PERMIT 85424

CalPortland Company – Rillito, Arizona

Prepared By:

TRINITY CONSULTANTS
702 E. Osborn Rd.
Suite 160
Phoenix, AZ 85014
(602) 274-2900

August 2025
Revised: November 2026

Project 250301.0020

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1. EXECUTIVE SUMMARY

CalPortland Company (CalPortland) owns and operates a portland cement manufacturing facility (the Facility), with primary SIC Code 3241, which is located at 11115 Casa Grande Highway, Rillito, Pima County, Arizona, in an area which is classified as nonattainment for the particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) National Ambient Air Quality Standard (NAAQS). The Facility currently operates under Arizona Department of Environmental Quality (ADEQ) Class I Air Quality Permit No. 85424, last revised on March 2, 2026 to authorize Minor Permit Revision No. 113625. The Facility includes a quarry, rock and stone aggregate plant operations, a portland cement plant, and other ancillary processes. The Facility is a New Source Review (NSR) major source for filterable particulate matter (PM), PM_{10}, particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$), nitrogen oxides (NO_x), carbon monoxide (CO), and sulfur dioxide (SO_2). The Facility is also a major source under the federal Title V program for PM_{10}, $PM_{2.5}$, NOx, CO, SO_2, and hazardous air pollutants (HAPs).

CalPortland submitted its initial application for Class I permit renewal and Significant Permit Revision (SPR) (the initial Application) to the ADEQ on August 24, 2025. On April 2, 2026, CalPortland submitted an addendum to the initial Application (the Addendum) requesting the addition of a central mix concrete batch plant (CBP) at the Facility. Since the initial submittal, the emission calculations have also been revised to incorporate ADEQ's comments. CalPortland is submitting this revised version of the application (the Application) to consolidate the previous submittals and subsequent revisions into a single document.

Per Arizona Administrative Code (A.A.C.) R18-2-304.D.2, a "timely" renewal application for a Class I source is one that is submitted at least 6 months, but not more than 18 months, prior to the date of permit expiration. Permit No. 85424 was scheduled to expire on March 2, 2026. CalPortland submitted the initial Application on August 24, 2025, which met the required timeline.

CalPortland is also seeking to authorize the following changes at the Facility with this permit renewal and revision application, in accordance with A.A.C. 18-2-320.A (Significant Permit Revision procedures).

- Update the historical representation of certain emission sources at the Facility by revising the Potential to Emit (PTE) calculations to reflect current operations at the Facility. These sources are identified in Section 4.3.
  - Note that any increases or decreases associated with these changes are not considered a proposed physical change or change in the method of operation.

- Update the facility-wide PTE to reflect emission changes from all permit revisions and changes authorized without a permit revision (i.e., 317 notifications) since the last permit renewal.

- Update the language in certain permit conditions and revise the equipment list contained in Attachment D of Permit No. 85424 (Revision 113625) to reflect equipment changes proposed in this application, as well as update the equipment ID for equipment at the Twin Peaks Rock and Stone Aggregate Plant to align with the field ID for those units. Section 7 provides a list of the proposed permit condition language changes, while Appendix B provides a redline version of the permit containing the proposed condition language changes and equipment list changes.

- Make the following physical changes and/or changes in the method of operation at the Facility, referred to as "the Project".

- Authorize additional non-hazardous secondary materials (NHSMs) to be combusted in either the existing Kiln 4 burner or calciner as fuels, including but not limited to engineered fuels, biomass fuels (including, but not limited to, construction and demolition wood, pistachio shells, almond shells and yard clippings), paper cardboard, biosolids, and dust collector bags generated on-site. No PTE increases are expected from the addition of the proposed alternative fuels.
- Remove the Kiln 4 fuel proportion limits in Condition VIII.A(1) of permit Attachment C. These limits were historically added prior to the establishment of NESHAP LLL in 1999. Kilns are now subject to the NESHAP LLL Total Hydrocarbon (THC) limits, which require CalPortland to monitor THC (treated as VOC) emissions via Continuous Emission Monitoring System (CEMS). CalPortland believes this continuous monitoring is sufficient to ensure compliance with the Kiln 4's VOC PTE representation.
- Addition of a new clinker route, the "D2 Bypass", in the Clinker Cooler 4 handling system, which would allow clinker to be transferred from a three-way diverter via new slide valve (H2-PF2-DG2) into a new belt conveyor (H2-BC3) that would be controlled by existing dust collector H2-DC2. The material would then drop into existing belt conveyor C2-BC8, and emissions would be controlled by a new dust collector (H2-DC5). Transfer downstream of C2-BC8 remains unchanged.
- Revisions to the historical PTE representation of the aggregate operations at the Facility, including the Twin Peaks Rock and Stone Aggregate Plant and the Cotton Field Primary and Overland Plant, to reflect the current operational configurations of the operations.
- Increase the maximum processing throughput of the Twin Peaks Rock and Stone Aggregate Plant and the Cotton Field Primary and Overland Plant operations, pave a portion of the customer truck unpaved road, and improve control efficiency of unpaved road watering.
  - Accordingly, CalPortland requests an increase to the throughput limit contained in Condition III.B(1) of permit Attachment B.
  - The proposed changes will add equipment, as well as adjust the transfer configuration of some equipment.
- Addition of a Manufactured Fines Plant and an Aggregate Wash Plant, with a throughput capacity of 400,000 tpy and 1,500,000 tpy, respectively, which would add new equipment to further process aggregates at the Facility, and generate PM, PM_{10}, and $PM_{2.5}$ emissions.
- Addition of a central mix CBP with a maximum concrete production capacity of 561,600 tons per year (tpy), based on a maximum operating schedule of 12 hours per day, 6 days per week, and 52 weeks per year. The CBP will have the potential to emit PM, PM_{10}, $PM_{2.5}$, and HAP emissions. Aggregate and sand raw materials will be sourced from the new Wash Plant, while cement will be sourced from the portland cement plant at the Facility.

The proposed changes will not increase the PTE of any regulated minor NSR pollutants by an amount greater than or equal to the permitting exemption thresholds[1], and therefore this application is not considered a minor NSR modification. Furthermore, the Project Emissions Increase (PEI) does not exceed the Significant Emission Rates (SERs), and the Project is not considered a major modification [2]. Table 1-1 contains a summary of the pre-Project and post-Project Facility PTE. Detailed emission calculations are provided in Appendix A.

Accordingly, CalPortland is therefore submitting this Class I permit renewal and Significant Permit Revision (SPR) application pursuant to A.A.C. R18-2-304.B and R18-2-320.

[1] Per A.A.C. R18-2-101.101.
[2] Per A.A.C R18-2-101.74.

Table 1-1. Facility PTE Summary

Pollutant	Total Emissions (tpy)
Pre-Project PTE	
PM	2,362.11
PM_{10}	1,674.63
$PM_{2.5}$	598.56
CO	5,203.27
NO_x	5,218.02
SO_2	11,347.44
VOC	16.90
Lead	0.05
Max Single HAP (HCl)	101.78
HAPs	135.06
CO_2	250,051.28
CH_4	21.11
N_2O	3.05
CO_{2e} [1]	251,449.73
Post-Project PTE	
PM	2,360.36
PM_{10}	1,677.12
$PM_{2.5}$	599.29
CO	5,203.27
NO_x	5,218.02
SO_2	11,347.44
VOC	16.90
Lead	0.05
Max Single HAP (HCl)	101.78
HAPs	135.06
CO_2	250,051.28
CH_4	21.11
N_2O	3.05
CO_{2e} [1]	251,449.73

CO_{2e} calculated with Global Warming Potentials (GWPs) obtained from Subpart A of 40 CFR 98, Table A–1 "Global Warming Potentials" (1/16/25).

CO_2	1
CH_4	28
N_2O	265

2. ADEQ CLASS I APPLICATION FORM

Per A.A.C R18-2-304.B, to apply for any permit required by A.A.C. Title 18, Chapter 2, applicants must complete the applicable standard application form provided by the ADEQ and supply all information required by the form's filing instructions. Section 3 of the report includes a completed ADEQ Standard Permit Application Form and an administrative completeness checklist identifying the location of the information required by the associated filing instructions in Section 2.4 of ADEQ's Application Packet for a Class I Permit.

SECTION 2.1

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Air Quality Division

1110 West Washington • Phoenix, AZ 85007 • Phone: (602) 771-2338

STANDARD CLASS I PERMIT APPLICATION FORM

(As required by A.R.S. § 49-426, and Chapter 2, Article 3, Arizona Administrative Code)

1. Permit to be issued to (Business license name of organization that is to receive permit):
   CalPortland Company
2. Mailing Address: P.O. Box 338
   City: Rillito State: Arizona ZIP: 85654
3. Name (or names) of Owners/ Principals: CalPortland Company
   Phone: Fax: Email:
4. Name of Owner's Agent: Mark Simmons
   Phone: (520) 616-1200 Fax: Email: msimmons@calportland.com
5. Plant/Site Manager/ Contact Person and Title: Andrew Estrella, Environmental Manager
   Phone: (619) 305-5371 Fax: Email: aestrella@calportland.com
6. Plant Site Name: CalPortland - Rillito Cement Plant
7. Plant Site Location Address: 11115 N. Casa Grande Highway
   City: Rillito County: Pima County Zip Code: 85654
   Indian Reservation (if applicable, which one): N/A
   Latitude/ Longitude, Elevation: 32.410, -111.149, 2,065 ft
   Section/ Township/ Range: S6 T12S R12E
8. General Nature of Business: Portland Cement Manufacturing
9. Type of Organization:
   ☒ Corporation ☐ Individual Owner ☐ Partnership ☐ Government Entity (Government Facility Code----------)
   ☐ Other
8. Permit Application Basis: ☐ New Source ☒ Revision ☒ Renewal of Existing Permit
   (Check all that apply.)
   For renewal or modification, include existing permit number (and exp. date): No. 85424, March 2, 2026
   Date of Commencement of Construction or Modification: After submittal of application
   Primary Standard Industrial Classification Code: 3241
9. I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by ADEQ as public record. I also attest that I am in compliance with the applicable requirements of the Permit and will continue to comply with such requirements and any future requirements that become effective during the life of the Permit. I will present a certification of compliance to ADEQ no less than annually and more frequently if specified by ADEQ. I further state that I will assume responsibility for the construction, modification,

or operation of the source in accordance with Arizona Administrative Code, Title 18, Chapter 2 and any permit issued thereof.

Signature of Responsible Official: Mark R. Simmons

Official Title of Signer: Plant Manager

Typed or Printed Name of Signer: Mark Simmons

Date: 8/25/2025 Telephone Number: (520) 616-1200

SECTION 2.2 - EMISSION SOURCES

PAGE_____OF _____
DATE _____

Estimated "Potential to Emit" per A.A.C. R18-2-101.
Review of applications and issuance of permits will be expedited by supplying all necessary information on this Table.

REGULATED AIR POLLUTANT DATA					EMISSION POINT DISCHARGE PARAMETERS										
EMISSION POINT [1]		CHEMICAL COMPOSITION OF TOTAL STREAM	AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION POINT [5]			STACK SOURCES [6]					NONPOINT	
NUMBER	NAME	REGULATED AIR POLLUTANT NAME [2]	#/ HR. [3]	TONS/ YEAR [4]	ZONE	EAST (Mtrs)	NORTH (Mtrs)	HEIGHT ABOVE GROUND (feet)	HEIGHT ABOVE STRUC. (feet)	EXIT DATA			SOURCES [7]	
										DIA (ft.)	VEL. (fps)	TEMP. (°F)	LENGTH (ft.)	WIDTH (ft.)
See Appendix A of Application														

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL_____feet
ADEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (A.A.C. R18-2-101)

****Submit emission calculations spreadsheet with your application****

General Instructions:

1. Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K.

2. Components to be listed include regulated air pollutants as defined in A.A.C. R18-2-101. Examples of typical component names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO_2), Volatile Organic Compounds (VOC), particulate matter (PM), particulate less than 10 microns (PM_{10}), etc. Abbreviations are O.K.

3. Pounds per hour (#/HR) is maximum potential emission rate expected by applicant.

4. Tons per year is annual maximum potential emission expected by applicant, which takes into account process operating schedule.

5. As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is a major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines.

6. Supply additional information as follows if appropriate:
   (a) Stack exit configuration other than a round vertical stack. Show length and width for a rectangular stack. Indicate if horizontal discharge with a note.
   (b) Stack's height above supporting or adjacent structures if structure is within 3 "stack height above the ground" of stack.

7. Dimensions of nonpoint sources as defined in A.A.C. R18-2-101.

SECTION 2.3 - EQUIPMENT LIST

The following table should include all equipment utilized at the facility, and should be completed with all the requested information. Be sure to notate the units (tons/hour, horsepower, etc.) when recording the Maximum Rated Capacity information, the Serial Number and/or the Equipment ID Number. The date of manufacture must be included in order to determine if portions of the facility are NSPS applicable. Make additional copies of this form if necessary.

Submit photographs of the faceplates for all engines listed below. If an engine is certified, please also include a copy of the engine certification with the application. For any newly added equipment, include a copy of the specification sheet. These documents will be used to verify equipment information and determine applicable regulations.

Type of Equipment	Maximum Rated Capacity [1]	Make	Model	Serial Number	Date of Manufacture	Equipment ID Number
See Appendix D of Application						

[1] For generator sets, enter the maximum rated capacity of the engine rather than the maximum rated capacity of the generator.

SECTION 4.0 - APPLICATION ADMINISTRATIVE COMPLETENESS CHECKLIST

	REQUIREMENT	MEETS REQUIREMENTS			COMMENT
		YES	NO	N/A	
1	Has the standard application form been completed?	X			Section 2
2	Has the responsible official signed the standard application form?	X			Section 2
3	Has a process description been provided?	X			Sections 4 and 5
4	Are the facility's emissions documented with all appropriate supporting information?	X			Section 10, Appendix A
5	Is the facility subject to Minor NSR requirements? If the answer is "YES", answer 6a, 6b and 6c as applicable. If the answer is "NO", skip to 7.		X		Section 12
6.a	If the facility chooses to implement RACT, is the RACT determination included for the affected pollutants for all affected emission units?			X	
6.b	If the facility chooses to demonstrate compliance with NAAQS by screen modeling, is the modeling analysis included?			X	
6.c	If refined modeling has been conducted, is a comprehensive modeling report along with all modeling files included?			X	
7	Does the application include an equipment list with the type, name, make, model, serial number, maximum rated capacity, and date of manufacture?	X			Appendix B
8	Does the application include an identification and description of Pollution Controls? (if applicable)	X			Section 4, Section 9, Appendix A
9	For any application component claimed as confidential, are the requirements of AR.S. 49-432 and A.A.C. R18-2-305 addressed?			X	
10	For any current non-compliance issue, is a compliance schedule attached?			X	Section 15
11	For minor permit revision that will make a modification upon submittal of application, has a suggested draft permit been attached?	X			Appendix B
12	For major sources, have all applicable requirements been identified?	X			Section 12
13	For major sources, has a CAM applicability analysis been provided? For CAM applicable units, have CAM plans been provided?	X			Section 14
14	For major sources subject to requirements under Article 4 of the A.A.C., have all necessary New Source Review analyses identified in the application been presented?			X	Section 12.3.1

3. APPLICATION ADMINISTRATIVE COMPLETENESS

Table 3-1 provides a list of the permit application contents required by Section 2.4 of ADEQ's Application Packet for a Class I Permit along with a reference to where the information is located in this application.

Table 3-1. Application Completeness Summary

Section 2.4 of Class I Application Packet[4]	Information Required	Permit Application Section
1,2	Process/Product Description including Standard Industrial Classification (SIC)	Section 4
3,4	Description of Alternate Operating Scenarios	Section 6
5	Process Flow Diagrams	Section 8, Appendix C
6	Material Balance Calculations	NA [a]
7	Emission Related Information	Section 10, Appendix A
8	Applicable Requirements	Section 12
9	Proposed Exemptions from Applicable Requirements	NA [b]
10(a)-(f), (h)	Annual and Hourly Process Rates, Fuel Usage, Raw Material Information	Section 4, Section 10
10(g)	Operating Schedule	Section 4, Section 10
11	Process and Control Equipment	Appendix A; Appendix B
12	Stack Information	NA [c]
13	Site Diagram	Section 9
14	Air Pollution Control Information	Appendix A; Appendix B
15	Acceptable Documentation for Equipment	Appendix D [d]
16	Compliance Plan [e]	Section 15
17	Compliance Certification [e]	Section 16 and Appendix E
18	Acid Rain Information [f]	N/A [f]
19	New Major Source or Major Modification Requirements	Section 12.2.1
20	Emission Calculations	Appendix A

[a.] No emission calculations are based on material balances.
[b.] CalPortland is not proposing changes to otherwise applicable requirements.
[c.] CalPortland is not proposing any changes to the existing equipment stack information, therefore, no stack information for these units is being provided. Additionally, an Air Quality Impact Assessment (AQIA) is not being submitted for the Project, and therefore stack information for new sources associated with the Project is not being provided.

[4] See https://static.azdeq.gov/forms/classI_app.pdf

3. APPLICATION ADMINISTRATIVE COMPLETENESS

Table 3-1 provides a list of the permit application contents required by Section 2.4 of ADEQ's Application Packet for a Class I Permit along with a reference to where the information is located in this application.

Table 3-1. Application Completeness Summary

Section 2.4 of Class I Application Packet[3]	Information Required	Permit Application Section
1,2	Process/Product Description including Standard Industrial Classification (SIC)	Section 4
3,4	Description of Alternate Operating Scenarios	Section 6
5	Process Flow Diagrams	Section 8, Appendix C
6	Material Balance Calculations	NA [a]
7	Emission Related Information	Section 10, Appendix A
8	Applicable Requirements	Section 12
9	Proposed Exemptions from Applicable Requirements	NA [b]
10(a)-(f), (h)	Annual and Hourly Process Rates, Fuel Usage, Raw Material Information	Section 4, Section 10
10(g)	Operating Schedule	Section 4, Section 10
11	Process and Control Equipment	Appendix A; Appendix B
12	Stack Information	NA [c]
13	Site Diagram	Section 9
14	Air Pollution Control Information	Appendix A; Appendix B
15	Acceptable Documentation for Equipment	0 [d]
16	Compliance Plan [e]	Section 15
17	Compliance Certification [e]	Section 16 and Appendix E
18	Acid Rain Information [f]	N/A [f]

[3] See https://static.azdeq.gov/forms/classI_app.pdf

Section 2.4 of Class I Application Packet[3]	Information Required	Permit Application Section
19	New Major Source or Major Modification Requirements	Section 12.2.1
20	Emission Calculations	Appendix A

[a.] No emission calculations are based on material balances.
[b.] CalPortland is not proposing changes to otherwise applicable requirements.
[c.] CalPortland is not proposing any changes to the existing equipment stack information, therefore, no stack information for these units is being provided. Additionally, an Air Quality Impact Assessment (AQIA) is not being submitted for the Project, and therefore stack information for new sources associated with the Project is not being provided.
[d] Information provided for the Project includes available drawings and manufacturer specification sheets.
[e] CalPortland is in compliance with all applicable regulations.
[f] Acid rain information is required only for facilities subject to federal acid rain regulations. The Rillito is not subject to acid rain regulations.

4. FACILITY DESCRIPTION

The CalPortland Rillito Plant currently consists of a quarry, a portland cement manufacturing plant, and the aggregate processing operations, which include the Twin Peaks Rock and Stone Aggregate Plant, the Cotton Field Primary and Overland Plant, as well as ancillary activities. The Facility is a source of the following regulated air pollutants:

- PM;
- PM_{10};
- $PM_{2.5}$;
- NO_X;
- CO;
- VOCs;
- SO_2;
- Lead (Pb) and Pb compounds;
- GHGs [4], including carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O); and
- HAPs.

Descriptions of all current major and support operations at the Facility are presented in the following subsections.

4.1 Operating Schedules

The cement plant and quarry operations can occur continuously (24 hours/day, 7 days/week, 52 weeks/year), while the aggregate processing plants operate 12 hours/day, 7 days/week, 52 weeks/year. PTE from cement plant and quarry emission sources that use time-based emission factors are quantified based on 8,760 hours of operation, unless otherwise specified in this section or Section 10.

4.2 Product Descriptions and SIC Codes

Main products from the Facility include aggregate and cement-related materials. The quarry supplies material such as limestone, shale, and dolomite for use in cement production, and overburden, some of which is considered aggregate grade-rock which is processed at the Twin Peaks and Cotton Field plants. The main product from the cement plant is cement, which is produced from a variety of intermediate products such as clinker, raw mix, raw materials, aggregate, and gypsum. Cement is stored in silos for transport off-site. The primary SIC code for the facility is SIC 3241 (Cement, Hydraulic). The aggregate plants produce crushed aggregate products of various size and shape specifications for diversified customer applications. The products are sold in bulk and transferred off-site via customer trucks.

4.3 Description of Existing Operations

The following sections provide a description for current major operations and processes at the Facility. Process Flow Diagrams found in Section 8 illustrate the flow of material throughout the plant.

[4] While GHGs are not included under the definition of "regulated air pollutant" at A.A.C. R18-2-101.122, they are considered a "regulated NSR pollutant" under the federal Prevention of Significant Deterioration (PSD) program at 40 C.F.R. § 52.21(b)(50) and therefore included here for informational purposes.

4.3.1 Quarry Crusher and Fines Screening System

Figure 8-2 and Figure 8-3 depict the material flow in the processes described in this section. The open pit quarry is mined for materials such as limestone, shale, and dolomite and produces overburden. Material is eventually used in the portland cement manufacturing plant while a portion of overburden is considered aggregate-quality material and is processed by the Twin Peaks Rock and Stone Aggregate Plant.

In the quarry, blast holes are drilled to an appropriate depth using mobile drills. The blast holes are filled with Ammonium Nitrate Fuel Oil (ANFO) and capped. Following a blast, loaders are used to load the fragmented material into haul trucks. The haul trucks transport the material to the Quarry Crusher System, and overburden is hauled to a stockpile adjacent to the quarry for storage.

The Quarry Crusher System begins with haul trucks dumping the cement-quality and aggregate-quality material to the truck dump hopper at the Quarry Crusher Building. A pan feeder (B2-PF1) reclaims the material from the hopper and feeds a vibrating grizzly (B2-VG1). Oversize material from the grizzly is transferred to an impact crusher (B2-IC1) for size reduction, which discharges onto a belt feeder (B2-BF1) and transfers to a belt conveyor (B2-BC1). Note proposed final permit No. 85424 (Revision 108491) covers the replacement of impact crusher (B2-IC1) and vibrating grizzly (B2-VG1) with new like-kind units due experiencing metal fatigue and other mechanical issues causing repeated failures.

Originally, the undersize material also dropped onto B2-BF1. This was modified with a diverter gate to take aggregate-quality material to a belt conveyor (B2-BC2) to be screened. As of May, CalPortland has replaced the drag chain B2-DR1 with a belt conveyor (B2-BC7) and removed the diverter gate and chute to B2-BF1. This results in all of the undersize material from the vibrating grizzly (B2-VG1) dropping onto B2-BC7 directly. The diverter gates previously underneath the grizzly have been replaced with a diverter on the discharge of B2-BC7. This gate diverts material to either the existing B2-BC2 that takes material to a vibrating screen (B2-VS1) or a new belt conveyor (B2-BC8) that bypasses B2-VS1 and drops directly on B2-BC3 to be discharged on B2-BC1. A new dust collector (B2-DC4) has been installed on the transfer point of B2-BC8 to B2-BC3. The existing dust collector B2-DC2 dedusts the diverter and transfer points from B2-BC7 to either B2-BC2 or B2-BC8. These changes are approved by proposed final permit No. 85424 (Revision 108491).

The material diverted to B2-BC2 feeds the vibrating screen (B2-VS1), which classifies oversize and undersize material. The oversize material is sent to B2-BC3 and back to B2-BC1 with the impact crusher material. The undersize material is transferred by three belt conveyors (B2-BC4 through 6) to a traveling stacker (B2-TS1) and deposited in a natural fines storage pile.

All materials discharged onto belt conveyor B2-BC1 feed the primary screen at the Screen Building (B3-VS1). Undersize material from the primary screen (B3-VS1) is conveyed to the Surge Storage Building (B-4) via belt conveyor (B3-BC3) and shuttle conveyor (B3-BC4) before transfer by the Overland Conveyor System. Oversize material from the screen is returned to the impact crusher via belt conveyors (B3-BC1 and B3-BC2) for reprocessing.

Various mineral additives are combined with limestone to produce raw mix. Additives are transported to the quarry by truck and to the cement plant by both truck and rail. At the quarry, additives are introduced into the process through a mixing process at the quarry face or directly to the truck dump hopper. At the cement plant, additives are introduced into the process through the raw mill system via four additive bins at the roller mill and two feed hoppers at the AC mills.

The particulate emissions from the quarry crusher and fines screening system are controlled by the following pollution control devices:

- Dust Collector B2-DC1,
- Dust Collector B2-DC2,
- Dust Collector B2-DC3,
- Dust Collector B2-DC4, and
- Dust Collector B3-DC1.

Various material transfer points which are not controlled by dust collectors are controlled via wet suppression (e.g., water sprays), as identified in Appendix A.

Particulate emissions from vehicle travel on unpaved roads in the quarry area are controlled by water trucks, and/or the application of chemical dust suppressants.

4.3.2 Overland Conveyor System

Figure 8-2 depicts the material flow in the processes described in this section. The Overland Conveyor System consists of vibrating feeders (B5-VF1 through B5-VF12) reclaiming material from the Surge Storage Building and transferring it approximately 4 miles by the overland conveying system (belt conveyors B5-BC1 through B5-BC4). Belt conveyor (B5-BC4) discharges to an initial diverter gate (B7-DG1) where material can flow to either a belt conveyor (B11-BC1) associated with the Twin Peaks Rock and Stone Aggregate Plant or a second diverter gate (B7-DG2). At the second diverter gate (B7-DG2), material can be transferred to either the Rock Storage Building via a belt conveyor (B8-BC1) or the Stacker Reclaimer Building via a belt conveyor (B7-BC1). The Overland Conveying System is also used to convey additives stored at the quarry to the cement plant.

Emissions from the overland conveyor system are controlled by the following pollution control devices:

- Dust Collector B5-DC1,
- Dust Collector B5-DC2,
- Dust Collector B5-DC3, and
- Dust Collector B7-DC1.

4.3.3 Stacker/Reclaimer and Storage Area

Figure 8-4 depicts the material flow in the process described in this section. Material from the Overland Conveyor System travels by a gravity chute to belt conveyors (B7-BC1 and B7-BC2) followed by stacker boom conveyor (B7-BC3), with stacker (B7-TS), that discharges to the stacker surge pile in the Stacker/Reclaimer Building. Alternatively, rock is transported to the Rock Storage Building via two belt conveyors (B8-BC1 and B8-BC1A) in series. Rock is recovered from the stacker surge piles in the stacker/reclaimer building using a reclaimer (C2-TR1) for transfer to the Roller Feed Mill Area (see Section 4.3.4). Material can also be transferred to the Finish Mill feed bins (see Section 4.3.15) or Rock Storage (see Section 4.3.7) via a belt conveyor (C2-BC4).

Emissions from the stacker/reclaimer and storage area are controlled by the following pollution control devices:

- Dust Collector B7-DC1,
- Dust Collector B8-DC1, and
- Dust Collector B8-DC2.

4.3.4 Roller Mill Feed Area

Figure 8-5 depicts the material flow in the process described in this section. Rock stored in the Stacker/Reclaimer Building is reclaimed by a series of drag rakes (C2-DR1 and C2-DR2), bucket elevators (C2-BE3 and C2-BE4), and belt conveyors (C2-BC1 through C2-BC3 and C2-BC3-MGT-BC). Alternatively, rock can be deposited into a hopper (C2-BC3-BF1-HOP) to be transferred by a belt feeder (C2-BC3-BF1) to belt conveyor (C2-BC3). From there, the material is deposited on belt conveyor (C2-BC7) and transferred to surge bins (C2-SB7 and C2-SB8). Bin vibrators (D4-VB1 and D4-VB2) feed the material to belt scales (D4-BS1 and D4-BS2) followed by belt conveyor (D4-BC1).

Additives are transported to the roller mill feed area by both truck and rail. The additives are separately loaded into a hopper (D4-HOP), deposited on a belt feeder (D4-BF1), and transferred to a bucket elevator (D4-BE1). From the bucket elevator, material is transferred to the drag conveyor (D4-DR1) and then to additive bins (D4-SB3 through D4-SB6). Bin vibrators (D4-VB4 and D4-VB5) deposit limestone and additives on the belt scales (D4-BS4 and D4-BS5) and the desired proportions are delivered to a belt conveyor (D4-BC1) for transfer to the Roller Mill (see Section 4.3.5).

Emissions from the roller mill feed area are controlled by the following pollution control devices:

- Dust Collector C2-DC1,
- Dust Collector C2-DC3,
- Dust Collector D4-DC1, and
- Dust Collector D4-DC2.

4.3.5 Roller Mill

Figure 8-6 depicts the material flow in the process described in this section. Raw materials from the Roller Mill Feed Area (see Section 4.3.4) are conveyed to the roller mill (D4-RM1) for grinding. Material processed by the roller mill is dried by either passing gases from the Kiln 4 preheater/pre-calciner through the materials or by using a natural gas heater. A separator (D4-SS1) is used to separate the fine particles from the coarse particles. The fine particles are then transported to one of four cyclones (D4-CC1 through D4-CC4) for product recovery of the raw mix. The material passes through various air slides to the homogenizing and kiln feed silos (see Section 4.3.6). The coarse particles are received by a bucker elevator (D4-BE2) where they can either be transferred to a storage bin (D4-SB1) followed by a vibrating feeder (D4-VF1) to trucks or returned to the roller mill.

Emissions from the roller mill are controlled by the following pollution control device:

- Baghouse H5-GB

4.3.6 Homogenizing and Kiln Feed Silos

Figure 8-7 depicts the material flow in the process described in this section. Raw mix from the Roller Mill (see Section 4.3.5) is delivered by an air gravity conveyor to the homogenizing silo (F2-SB1) where it can be transferred to one of two kiln feed storage silos (F3-SB1 and F3-SB2) via a bucket elevator (F2-BE1 and F2-BE2). It is then conveyed via bucket elevator (F3-BE1) to the Kiln 4 raw mix bin (H4-FB1) (see Section 4.3.13). Raw mix can also be transferred from the homogenizing silo to the proportioning silos (see Section 4.3.9).

The kiln dust bin (F2-SB2) stores kiln dust pumped from a dust bin (H5 Dust Bin). When the Roller Mill is operating, the material handling equipment transfers the kiln dust to the homogenizing silo where it is blended

with the raw mix from the mill. When the roller mill is not operating, the kiln dust remains in the kiln dust bin until the roller mill commences operation.

Emissions from homogenizing and kiln feed silos are controlled by the following pollution control devices:

- Dust Collector F2-DC1,
- Dust Collector F2-DC4,
- Dust Collector F2-SB2-DC,
- Dust Collector F3-DC1, and
- Dust Collector F3-DC2.

4.3.7 Raw Feed Materials to Rock Storage

Material is transferred into the pan conveyor (B9-PF1) followed by a hopper (Crusher Hopper) and belt conveyor (B9-BC1) that deliver the material to a vibrating screen (B9-VS1). Material from the screen is either directed to the impact crusher (B9-IC) or belt conveyor (B9-BC6) where it is loaded on to haul trucks for storage in material stockpiles. The impact crusher discharges to belt conveyor (B9-BC2) that conveys material to a vibrating screen (B9-VS2). Undersize material is delivered to a belt conveyor (B9-BC4) for rock storage (see Section 4.3.7). Oversize material is delivered to a belt conveyor (B9-BC3) and returned to the vibrating screen (B9-VS1) for an additional pass through the impact crusher. The hopper (B9-BC4-BF-HOP) deposits material on a belt feeder (B9-BC4-BF) for delivery to belt conveyor (B9-BC4).

Emissions from raw feed materials to rock storage are controlled by the following pollution control devices:

- Dust Collector B9-DC1,
- Dust Collector B9-DC2,
- Dust Collector B9-DC3, and
- Dust Collector B9-DC5.

4.3.8 Raw Grinding – AC Area

Additives from four concrete partitions are deposited on four belt scales (AC-BS1 through AC-BS4) and the desired proportions are delivered to a belt conveyor (AC-BC1). The belt conveyor transfers the material to a bucket elevator (AC-BE1) followed by a drag conveyor (AC-DR1). The drag conveyor transfers materials to four feed bins (AC1-SB through AC4-SB). Materials from the feed bins are deposited onto belt scales (AC1-BS1 to AC4-BS1, with vibrating feeders AC2-BS1-VF1 and AC3-BS1-VF1 at the bottom of AC2-SB and AC3-SB, respectively) for transport to four mills (AC1 Mill through AC4 Mill). Following milling, the material is delivered to four bucket elevators (AC1-BE1 through AC4-BE1) then to four separators (AC1-SS through AC4-SS). The fine particles continue on to the proportioning silos (see Section 4.3.9) as raw mix. The coarse particles are returned to the mills for further grinding.

Emissions from raw grinding – AC area are controlled by the following pollution control devices:

- Dust Collector AC-DC3,
- Dust Collector AC1-DC1,
- Dust Collector AC2-DC1,
- Dust Collector AC3-DC1, and
- Dust Collector AC4-DC1.

4.3.9 Proportioning Silos

Raw mix from the AC mills (see Section 4.3.8) is transferred to a bucket elevator (AC-BE2) and then to the 12 proportioning silos (F2-PS-SB1 through F2-PS-SB12). Raw mix is also transferred from the homogenizing silo (F2-SB1) (see Section 4.3.6) to an alleviator (AC-A1), by the pneumatic conveyance system (F2-POD), and to the 12 proportioning silos.

Emissions from proportioning silos are controlled by the following pollution control devices:

- Dust Collector AC-BE2-DC,
- Dust Collector AC-DC1,
- Dust Collector F2-PS-DC1,
- Dust Collector F2-PS-DC2, and
- Dust Collector F2-PS-DC3 (exhausted to the atmosphere).

4.3.10 Kilns 1, 2, and 3 Feed Silos

Figure 8-7 depicts the material flow in the process described in this section. The raw mix from the proportioning silos (see Section 4.3.9) is transferred by screw conveyor to a bucket elevator (F2-PS-BE1), to a screw conveyor (F3-KS-SCF), and then by screw conveyors into the six kiln feed silos (F3-KS-SB1 through F3-KS-SB6).

Emissions from kilns 1, 2, and 3 feed silos are controlled by the following pollution control devices:

- Dust Collector F3-KS-DC1 (exhausted to the atmosphere).

4.3.11 Kilns 1, 2, and 3

Figure 8-7 depicts the material flow in the processes described in this section. The three long rotary kilns (H3-K1-K through H3-K3-K) located at the Rillito facility were installed in 1949, 1952, and 1955. All three kiln systems include associated coolers and conveying systems for transporting the clinker to storage located in the Clinker Storage Building. The kilns are capable of using a variety of fuels including solid fuels (coal and coke), natural gas, and fuel oils (diesel, no. 2 fuel oil, and bunker C oil).

Raw mix from a bucket elevator (F3-KS-BE1) (see Section 4.3.10) is transported to the three kiln feed bins (Kiln #1 Bin through Kiln #3 Bin) by bucket elevators (H4-K1-FBE1, H4-K2-FBE1, and H4-K3-FBE1). Raw mix then enters kiln feed cyclones (H4-K1-CC, H4-K2-CC, or H4-K3-CC) before entering the three kilns (H3-K1-K through H3-K3-K) where it is gradually heated by contact with the hot gases from combustion of the kiln fuel. As the temperature of the raw mix rises, free water is evaporated and the composition of the raw mix changes. Minerals are transitioned into their constituent oxides, and partial melting causes the material to aggregate into lumps or nodules called clinker.

Dust collected in the dust collector (H5-5-GB) is transferred to a bucket elevator (H5-5-GB-BE1) and a dust bin (H5-5 Dust Bin). The dust is then pumped using a dust pump (H5-5-FP1) to a screw feeder (H5-5-SCF1) to three additional screw feeders (H5-1-SCF, H5-2-SCF, and H5-3-SCF1) and three bucket elevators (H4-K1-DBE1, H4-K2-DBE1, and H4-K3-DBE1) to be processed in Kilns 1, 2, and 3.

Emissions from Kilns 1, 2, and 3 are controlled by the following pollution control devices:

- Dust Collector H4-K1-DC,

- Dust Collector H4-K2-DC,
- Dust Collector H4-K3-DC,
- Dust Collector H5-5-DC1,
- Dust Collector H5-5-DC2, and
- Dust Collector H5-5-GB (exhausted to the atmosphere).

4.3.12 Clinker Coolers 1, 2, and 3

Figure 8-7 depicts the material flow in the processes described in this section. The clinker produced in each of the three kilns (see Section 4.3.11) drops into three clinker coolers (H2-QC1 through H2-QC3) where it is cooled and then broken into smaller pieces as it exits the coolers. The clinker is transported by three bucket elevators (H2-K1-BE1 through H2-K3-BE1), three drag conveyors (H2-QC1-DR1 through H2-QC3-DR1), and another bucket elevator (H2-3-DC-BE) to two belt conveyors (H2-KB1 and H2-KB4) for delivery to clinker storage.

Emissions from Clinker Coolers 1, 2, and 3 are controlled by the following pollution control devices:

- Dust Collector H2-KB1-DC,
- Dust Collector H2-KB3-DC,
- Dust Collector H2-1-DC,
- Dust Collector H2-2-DC, and
- Dust Collector H2-3-DC.

4.3.13 Preheater and Kiln 4

Figure 8-8 and Figure 8-9 depict the material flow in the processes described in this section. The rotary kiln (H3-K4-K) is a preheater/precalciner rotary kiln constructed in 1971. The kiln system includes an associated cooler and conveying system for transporting the clinker to storage located in the Clinker Storage Building. The kiln is currently authorized to use a variety of fuels including solid fuels (coal and coke), natural gas, fuel oils (diesel, no. 2 fuel oil, and bunker C oil), and supplemental fuels (on specification used oil, jet fuel, shredded tires, and wood chips and/or pecan shells). Note, proposed final permit No. 85424 (Revision 108491), also included the replacement of the Kiln 4 burner pipe with a new multi-fuel burner pipe to increase the thermal efficiency

The raw mix processed in Kiln 4 undergoes a similar transformation as for Kilns 1-3 but a different process is employed for the preheater/precalciner rotary kiln. The raw mix from the Kiln 4 raw mix bin (H4-FB1) is transported by weigh belt feeder (H4-BS) to two bucket elevators in series (H4-BE1 and H4-BE2), through rotary airlocks (H4-RF2 and H4-RF3) to a series of cyclones (H4-CC1A through H4-CC3A and H4-CC1B through H4-CC3B), a preheater (Preheater), a calciner (Calciner), and a final cyclone (H4-CC4A). Alternatively, raw mix can be received by a hopper (H3-K4-HOP) and fed by a screw feeder (H3-K4-SCF1) and belt conveyor (H3-K4-BC1) to a bucket elevator (H3-K4-BE1) and into a cyclone (H4-CC3B). Two storage bins (H3-K4-WF1-SB and H3-K4-WF2-SB) and two fuel feeders (H3-K4-WF1 and H3-K4-WF2) deliver coal/coke fuel to the kiln.

As approved by proposed final permit No. 85424 (Revision 108491), CalPortland is planning to install alternative fuels handling systems to combust alternative fuels in either the existing Kiln 4 burner or the calciner. The fuels will arrive at the Facility in trucks and unload in one of two ways: walking floor trucks will dump directly onto the initial conveyor, or delivery trucks will dump in a storage area where front-end loaders will move material onto the initial conveyor. From there, the product will be transported along a series of drag conveyors into a load cell hopper. Material is then released onto a belt scale before passing into screw conveyors that will take it to a rotary feeder then pneumatically convey the material to its final combustion

site (either the kiln burner or the calciner). The alternative fuels handling system will include five new baghouses and, with the exception of delivery trucks unloading to the floor of the storage area, each emission point will be controlled with a baghouse.

Dust from the Kiln 4 dust collector (H5-GB) is transported by screw conveyor to a bucket elevator (H5-BE1) for transfer to a dust bin (H5 Dust Bin). Fuller Kinyon pumps (H5-FP1 and H5-FP2) pump dust from the dust bin to the waste bin, kiln dust bin, homogenizing silos, or proportioning silos.

The SNCR System for Kiln 4 (H7-UR) includes the injection of liquid urea into the pre-calciner tower before material enters the kiln. The urea is converted to NH_3 through thermal decomposition to become an effective reductant. Liquid urea solution is stored in stainless steel tanks near Kiln 4. The tanks are mounted on a concrete pad. A redundant pump system transfers liquid urea to the injection ports in the pre-calciner tower, where it is vaporized by the heat of the pre-calciner.

A lime injection system (H7-LJ) assists with HCl control on an as-needed basis. Hydrated lime is delivered in an enclosed truck and stored in a lime bin (H7-LJ-LB1). The bin has an associated lime bin vent (H7-LJ-SB1-DC) to help to capture and recover any lime entrained in the air displaced during the bin filling process. The hydrated lime is metered into the inlet duct of the Kiln 4 baghouse (H5-GB) and/or the Kiln 4 induced draft fan.

Emissions from the preheater, Kiln 4, and the lime bin are controlled by the following pollution control devices:

- Dust Collector H3-K4-DC1,
- Dust Collector H3-K4-DC2,
- Dust Collector H4-DC1,
- Dust Collector H5-DC1, and
- Dust Collector H5-GB.

4.3.14 Clinker Cooler 4

Figure 8-10 depicts the material flow in the processes described in this section. The clinker produced in Kiln 4 drops into a clinker cooler (H2-QC4) where it is cooled and then broken into smaller pieces as it exits the cooler. The clinker is transported by a drag conveyor (H2-DR1) to two pan feeders (H2-PF1 and H2-PF2). The pan feeders transport clinker to either a bucket elevator (H2-BE1) that deposits the clinker into a storage bin (H2-SB1) for discharge into trucks or they transport clinker to the rock storage building.

As approved by proposed final permit No. 85424 (Revision 108491), CalPortland is planning to install additional equipment that will allow an additional clinker route, the "D3 bypass". The planned changes include the addition of a 3-way diverter gate (H2-PF2-DG1), which will allow clinker to be transferred from H2-PF2 into the existing D3 storage bin, the rock storage building. Other added equipment includes belt conveyor (H2-BC2), which is an intermediate transfer point for clinker routed to the D3 clinker bin, and a dust collector (H2-DC4).

Emissions from clinker cooler 4 are controlled by the following pollution control devices:

- Dust Collector H2-DC1,
- Dust Collector H2-DC2,
- Dust Collector H2-DC3,
- Dust Collector H2-GB, and
- Dust Collector H2-DC4.

4.3.15 Clinker/Gypsum Transport and Finish Mill Feed Bins

Figure 8-11 depicts the material flow in the processes described in this section. Rock from a feed bin in rock storage is transferred to a vibrating feeder (C2-VF1) and deposited on a series of belt conveyors (C2-BC8 through C2-BC11 and C2-BC11A or C2-BC5, C2-BC6, and C2-BC6A) using diverter gates. The belt conveyors deposit material into six Finish Mill feed bins (C2-SB1 through C2-SB6).

From the D2 Finish Mill feed bins, material is discharged on to six bin vibrators (D2-VB1 through D2-VB6) followed by six belt scale/feeders (D2-BS1 through D2-BS6). The belt/scale feeders deposit material onto three belt conveyors in series (D2-BC1, D2-BC2, and D2-BC6) prior to transport to the D2 Finish Mill (see Section 4.3.17).

Emissions from clinker/gypsum transport and Finish Mill feed bins are controlled by the following pollution control devices:

- Dust Collector C2-DC2,
- Dust Collector C2-DC4,
- Dust Collector C2-DC5,
- Dust Collector C2-DC6,
- Dust Collector C2-DC7,
- Dust Collector C2-DC8,
- Dust Collector C2-DC9,
- Dust Collector C2-DC10,
- Dust Collector C2-DC11,
- Dust Collector C2-DC12,
- Dust Collector C2-DC13,
- Dust Collector D2-DC1,
- Dust Collector D2-DC1,
- Dust Collector D2-DC3,
- Dust Collector D2-DC5,
- Dust Collector D2-DC6, and
- Dust Collector D2-DC7.

4.3.16 Finish Milling- CM Area

Figure 8-7 depicts the material flow in the processes described in this section. Traditional portland cement is typically produced by milling a mixture of clinker, gypsum, and limestone. Finish milling commences with the reclaim and conveying of materials such as clinker, gypsum, limestone and cementitious materials from the Clinker Storage Building to storage bins for the D2 Finish Mill (see Section 4.3.17) and to hoppers in the Clinker Storage Building that feed the seven CM Finish Mills and the D3 Finish Mill (see Section 4.3.18). The Finish Mills grind the clinker and added materials into a powder product of consistent fineness.

Clinker is transported by three belt scales (CM-BS1 through CM-BS3), a belt conveyor (CM-BC1), three drag conveyors (CM-DR, CM-DR1, CM-DR2), and two bucket elevators (CM-BE1, CM-BE4) to one of six storage bins (CM1-SB through CM6-SB). Clinker is delivered to one of six mills (CM1-M through CM6-M) for grinding by way of six belt scales (CM1-BS1 through CM6-BS1) and six vibrating feeders (CM1-BS1-VF1 through CM6-BS1-VF1). Once ground, material travels in one of six bucket elevators (CM1-BE1 through CM6-BE1) to one of six separators (CM1-SS through CM6-SS) where the where oversize material is sent back to the mill and undersize material is delivered to the cement storage silos (CS-SB1 to CS-SB18) by pneumatic conveyors (CM-FP1 through CM-FP3).

In a similar manner, clinker from the clinker storage bin (CM7 Clinker Bin) is discharged by a vibrating feeder (CM7-BS1-VF1) to two roll crushers (CM7-RP1 and CM7-RP2), to a belt scale (CM7-BS1), and to the mill (CM7-M). Gypsum from the gypsum storage bin (CM7 Gypsum Bin) is discharged to a belt scale (CM7-BS2), to a belt conveyor (CM7-BC1), and to the mill (CM7-M). Limestone from the limestone storage bin (CM7 Limestone Bin) is discharged to a belt scale (CM7-BS3) and gypsum from the gypsum storage bin (CM7 Gypsum Bin) is discharged to a belt scale (CM7-BS2). The belt scales discharge to a belt conveyor (CM7-BC1), which delivers the material to the mill (CM7-M). Milled material is transported by a bucket elevator (CM7-BE1) to a separator (CM7-SS), is reclaimed by a product collector (CM7-DC3), transported by a bucket elevator (CM7-BE2) to the mill cooler (CM7-CX), and then to the 23 cement storage silos (see Section 4.3.19). Various additives from three storage silos (CM-MA-BIN1 through CM-MA-BIN3) are transferred by screw feeders (CM-MA-SCF1 through CM-MA-SCF3) to the bucket elevator (CM7-BE1) to be combined with the milled material. This process also includes various air slide devices, pneumatic conveying devices, and enclosed screw conveyor devices.

Emissions from finish milling – CM area are controlled by the following pollution control devices:

- Dust Collector CM1-DC1,
- Dust Collector CM2-DC1,
- Dust Collector CM3-DC1,
- Dust Collector CM4-DC1,
- Dust Collector CM5-DC1,
- Dust Collector CM6-DC1,
- Dust Collector CM7-DC1,
- Dust Collector CM7-DC2,
- Dust Collector CM-DC4,
- Dust Collector CM-DC5, and
- Dust Collector CM-MA-DC1.

4.3.17 Finish Milling – D2 Area

Figure 8-12 depicts the material flow in the processes described in this section. Material is transported from the six Finish Mill feed bins (see Section 4.3.15) to a belt conveyor (D2-1-BC1) and into the mill (D2-1-M). Milled material is carried by two bucket elevators (D2-1-BE3 and D2-1-BE4) to a separator (D2-1-SS) and product collector (D2-PC). The collected material passed through the separator where oversize material is sent back to the mill and undersize material is delivered to the storage silos (see Section 4.3.19) using the pneumatic pump (D2-FP1). This process also includes various air slide devices.

Emissions from finish milling – D2 Area are controlled by the following pollution control devices:

- Dust Collector D2-DC4, and
- Dust Collector D2-1-DC1 (exhausted to the atmosphere).

4.3.18 Finish Milling – D3 Area

Figure 8-13Figure 8-13Figure 8-13Figure 8-13Figure 8-13Figure 8-13Figure 8-13 depicts the material flow in the processes described in this section. Clinker from the clinker storage bin (D3-1-SB1) is transferred by a belt scale (D3-1-BS1) to a belt conveyor (D3-1-BC1). Gypsum from the gypsum storage bin (D3-1-SB2) deposits material on a variable feeder (D3-1-VB1), which is transferred by a belt scale (D3-1-BS2) to a belt conveyor (D3-1-BC1). The combined material from the belt conveyor is transferred to a belt conveyor (D3-1-BC2) and to a bucket elevator (D3-1-BE1).

Material is transferred from the limestone stockpile by front end loader to a hopper (D3-1-BC5-HOP). The material is conveyed by belt feeder (D3-1-BC5) to a bucket elevator (D3-1-BE1). The bucket elevator discharges to belt conveyors (D3-1-BC3 and D3-1-BC4) followed by roll presses (D3-1-HRP1 and D3-1-HRP2). The material either transferred to bucket elevator (D3-1-BE5) or vibrating feeder (D3-1-VF) where it is transferred back to belt conveyor (D3-1-BC2), and bucket elevator (D3-1-BE1). The bucket elevator (D3-1-BE5) feeds Finish Mill (D3-1-M) that discharges to bucket elevators (D3-1-BE2 and D3-1-BE3). The material is transferred by air slides, with associated material trap (D3-1-AS5B-MT) and rotary screen (D3-1-RS1), to a separator (D3-1-SS) followed by additional air slides and back to either bucket elevator (D3-1-BE1) or the Finish Mill. Material is directed to the product collector (D3-1-DC2) and through a series of air slides to either a bucket elevator (D3-1-BE4) or the pneumatic pump (D3-1-FP1) for transfer to the cement silos. Material from the bucket elevator travels through various air slides to the cement cooler (D3-1-CX) followed by the pneumatic pump for transfer to the cement silos (see Section 4.3.19). This process also includes various air slide devices, pneumatic conveying devices, and enclosed screw conveyor devices.

As an alternative to fine dust transfer via the air slides into the separator (D3-1-SS), CalPortland is planning to construct a new clinker dust shuttle system as approved by proposed final permit No. 85424 (Revision 108491). The new clinker dust shuttle system will transport fine dust from the clinker cooler baghouse to the D3 Finish Mill separator, with the goal of reducing dust entrained within the clinker storage building. The clinker dust shuttle system is not intended for the long-term storage of fine dust and will only run when both the kiln and D3 Finish Mill are online concurrently.

The hopper will be placed on load cells to ensure as the bin is nearing capacity the screw extensions will reverse and revert to normal operation. Under normal operation, the collected dust is routed to pan conveyor (H2-PF1), after which the dust is combined with coarse clinker and sent to storage. Please refer to Appendix C for the clinker dust shuttle system process flow diagram.

All material transfer points will be fully enclosed and dedusted by the clinker cooler baghouse (H2-GB) or Finish Mill separator product collector (D3-1-DC2).

Emissions from finish milling – D3 Area are controlled by the following pollution control devices:

- Dust Collector D3-1-DC1,
- Dust Collector D3-1-DC2,
- Dust Collector D3-1-DC3, and
- Clinker Cooler Baghouse (H2-GB).

4.3.19 Product Storage and Bulk Loadout

Figure 8-14 depicts the material flow in the processes described in this section. Finished cement product is pneumatically conveyed from the Finish Mills (see Sections 4.3.16, 4.3.17, and 4.3.18) to the 23 cement storage silos (CS-SB1 through CS-SB23) via five alleviators (CM-A1 through CM-A5). Cement travels by three bucket elevators (BL-BE1 through BL-BE3), passes through one of three rotary screens (BL-RS1 through BL-RS3), to one of six storage bins (BL-SB1 through BL-SB6). Cement is bulk-loaded into both trucks and rail cars for export from the facility. This process also includes various air slide devices and enclosed screw conveyor devices.

Emissions from product storage and bulk loadout are controlled by the following pollution control devices:

- Dust Collector BL-DC1,

- Dust Collector BL-DC2,
- Dust Collector BL-DC3,
- Dust Collector BL-DC4,
- Dust Collector BL-DC5,
- Dust Collector BL-DC6,
- Dust Collector BL-DC7,
- Dust Collector BL-SB5-DC1,
- Dust Collector BL-SB5-DC2,
- Dust Collector BL-SB5-DC3,
- Dust Collector CM-DC8,
- Dust Collector CM-DC9,
- Dust Collector CM-DC10,
- Dust Collector CM-DC11,
- Dust Collector CM-DC12,
- Dust Collector CM-DC14,
- Dust Collector CM-DC15,
- Dust Collector CM-DC16, and
- Dust Collector CM-DC17 (exhausted to the atmosphere).

4.3.20 Cement Packhouse

Figure 8-14 depicts the material flow in the processes described in this section. The cement packhouse is used to load sacks with cement and palletize the sacks for shipment.

Cement from nine cement storage silos (CS-SB1 through CS-SB6 and CS-SB16 through CS-SB18) travels by screw conveyor to a bucket elevator (PH-BE1). The cement is passed through a rotary screen (PH-RS1), into a storage bin (PH-SB1), and to a cement packer (PH-PK3). A spill bin captures any overflow, which is returned to the bucket elevator. The cement sacks travel by belt conveyors (PH-PK3-BC1 and PH-PK3-BC2), stack elevators (PH-PK3-SE1C, PH-PK3-SE1A, and PH-PK3-SE1B), and additional belt conveyors (PH-PK3-BC4 and PH-PK3-BC5) to a palletizer (PH-PZ3) in preparation for shipment.

Similarly, cement from nine cement storage silos (CS-SB7 through CS-SB15) travels by screw conveyor to a bucket elevator (PH-BE2). The cement is passed through a rotary screen (PH-RS2), into a storage bin (PH-SB2), and to a cement packer (PH-PK4). A spill bin captures any overflow, which is returned to the bucket elevator. The cement sacks travel by belt conveyors (PH-PK4-BC1 and PH-PZ2-BC1), stack elevators (PH-PZ2-SE1C, PH-PZ2-SE1A, and PH-PZ2-SE1B), and additional belt conveyors (PH-PZ2-BC1 through PH-PZ2-BC5) to a palletizer (PH-PZ2) in preparation for shipment.

Cement from five cement storage silos (CS-SB19 through CS-SB23) travels by screw conveyor (PHSC9) to a hopper followed by a pneumatic conveyor (PH-FP1) where it can be directed to any of the storage silos (CS-SB1 to CS-SB23) or two storage bins (BL-SB-4 or BL-SB-5) in product storage.

Emissions from the cement packhouse are controlled by the following pollution control devices:

- Dust Collector PH-DC1,
- Dust Collector PH-DC2,
- Dust Collector PH-DC3,
- Dust Collector PH-DC4, and
- Dust Collector PH-DC5.

4.3.21 Solid Fuel (Coal/Coke) System

Figure 8- depicts the material flow in the processes described in this section. Coal and coke (which may include petroleum (pet) coke) are delivered by rail cars and unloaded into vibrating feed hoppers (RB-VF1 and RB-VF2) at the west rail unloading station. Unloaded coal is transferred by belt conveyor (R6-BC1) from the rail unloading hoppers to either the coal storage silo (R6-SB) or to haul trucks, which transfer the coal to the coal storage pile. Coke is also transferred by belt conveyor to haul trucks, which transfer coke to the storage pile.

Coal and coke are reclaimed from the storage piles by front-end loaders. Reclaimed coal/coke is unloaded into two vibrating feed hoppers (R6-VF1 and R6-VF2) and transferred into belt conveyor (R6-BC1). The coal and coke can then be transferred into the storage silo (R6-SB) or be loaded into trucks and hauled to the coal stockpiles via diverter gate (R6-DG1).

As approved by proposed final permit No. 85424 (Revision 108491), CalPortland is planning to make changes to the rail coal unloading system to improve process efficiency by adding operating scenarios for coal unloading. The planned changes include installing a new steeper belt conveyor (R6-BC1A) upstream of R6-BC1 leading out of the pit and shortening the existing belt conveyor (R6-BC1). A new diverter gate (R6-BC1A-DG1) will be installed at the discharge of belt conveyor R6-BC1A, so material can either be transferred to the existing belt conveyor (R6-BC1) or a new belt conveyor (R6-BC5). Material transferred to the existing belt conveyor (R6-BC1) will either go into the storage silo (R6-SB) or be loaded into trucks and hauled to the coal stockpiles. Material transferred to the new belt conveyor (R6-BC5) will be conveyed to a new radial stacker belt (R6-TS1) to build the coal stockpiles.

After material is stockpiled, it is considered coal reclaim. Some coal reclaim is transferred to the storage silo (R6-SB) for use in the process in the same manner coal is loaded into the silo. Some coal and coke reclaim can also be transferred by front-end loaders and dropped into two vibrating feed hoppers (R6-VF1 and R6-VF2), followed by belt conveyor (R6-BC1) into a hopper (R6-HOP) and belt scale (R6-BS1) that discharges to a belt conveyor (R6-BC2). The coal/coke storage silo (R6-SB) discharges to the same belt conveyor via three vibrating feeders (R6-BA1). Material passes through an impact crusher (R6-IC1) and a second belt conveyor (R6-BC3) prior to a diverter gate, it directs material to either a screw conveyor that feeds three storage bins (H3-K1-CM-SB through H3-K3-CM-SB) or a belt conveyor (R6-BC4) that feeds a storage bin (H3-K4-CM-SB).

Coal and coke from the storage bins (H3-K1-CM-SB through H3-K3-CM-SB are transported by the three weigh belt feeders (H3-K1-BS1 through H3-K3-BS1) to the three coal mills (H3-K1-CM through H3-K3-CM) to be pulverized. The pulverized fuel is transported by air from their respective kilns that is cooled and dedusted by cyclones (H3-K1-CM-CC through H3-K3-CM-CC). The fuel-air mixture is then blown into the burners to direct fire kilns one through three.

Coal and coke from the storage bin for Kiln 4 coal mill (H3-K4-CM-SB) is transported by a weigh belt feeder to the coal mill (H3-K4-CM) to be pulverized. The previous 150 ton Kiln 4 coal mill bin was replaced in August 2026 by a field-erected 135 ton coal mill bin, as described in the 317 notification approved by ADEQ on August 19, 2026. The pulverized fuel is then collected and dried by air from the Kiln 4 cooler and passes through a separator (H3-K4-CM-SS). The pulverized fuel is collected from the air stream by two pulverized fuel collectors (H3-K4-DC1 and H3-K4-DC2). The pulverized fuel is then transported by screw to two weigh feeders (H3-K4-WF1 and H3-K4-WF2) to be indirect fired into the Kiln 4 burner and calciner, respectively.

4.3.22 Aggregate Operations

The current aggregate operations at the Facility include the Twin Peaks Rock and Stone Aggregate Plant and the Cotton Field Primary and Overland Plant operations. The historical description of material transfers for

aggregate operations is being updated with this application to reflect the current operations. This includes the updating of some of the equipment IDs assigned to Twin Peaks and Cotton Field existing equipment in the permit equipment list to align with the field ID for those units, as outlined in Appendix B. **This description includes the updated equipment IDs.** The Cotton Field Primary and Overland Plant continued operations following approval by Permit No. 85424 (Revision 97981). It should be noted that some the initial equipment permitted for Cotton Field operations were not installed nor operated and therefore the historical permit equipment IDs are not being reassigned existing plant equipment (C-45, and C-48). However, some of those IDs for equipment that does not currently exist are being repurposed for new equipment proposed for the Project in Section 0.

4.3.22.1 Twin Peaks Rock and Stone Aggregate Plant

Figure 8-16 and Figure 8-17 depict the material flow in the processes described in this section. The Twin Peaks Rock and Stone Aggregate Plant is fed by the aggregate-quality material from the limestone quarry which is transferred by belt conveyor (B11-BC1) into belt conveyor (B11-BC2). The emissions from this transfer point are controlled by dust collector (B11-DC1). Material is then transferred through a series of belt conveyors (B11-BC2, B11-TS-BC1, and B11-TS-BC2) which feeds into the Aggregate Plant Feed Stockpile. The Particulate emissions from these transfers are controlled by the wet suppression carried over from the upstream transfer points. It should be noted that a portion of the aggregate transferred by conveyors B11-BC1, B11-BC2, B11-TS-BC1, and B11-TS-BC2 is used as cement/raw mix additive to prevent the haul by truck from the quarry, and is therefore not processed at the Twin Peaks Rock and Stone Aggregate Plant.

Front-end loaders are used to move the aggregate-quality material which is not used as cement/raw mix additive into Hoppers 1 and 2. The Hopper 1 feed is transferred via conveyors C-1 and C-2 into Screen S-1. Some of the undersize material from Screen S-1 discharges into a reversible conveyor that will typically transfer material into conveyors C-3 and C-13 to feed the 1/2" Screen Fill Stockpile. Conveyor C-4 also has the capability of discharging into Conveyor C-10. The remaining portion of Screen S-1 undersize material discharges into Conveyor C-9, followed by Conveyor C-10. Oversize material from Screen S-1 is fed into Crusher CR-1, which exhausts to Dust Collector TP-DC1. Crushed aggregate is then fed into Screen S-2, which transfers undersize material into a series of conveyors which ultimately discharge into Conveyor C-10. Oversize material is re-entered into Crusher CR-1. From Conveyor C-10, the material passes through a splitter, which discharges it into two streams. One stream combines with the Hopper 2 feed following discharge into Conveyor C-14. Lime Silo AGG-LS1 also transfers lime into Conveyor C-24 for mixing with the aggregate material, for feeding a product pile (Limestone Stockpile) following drops into Conveyors C-15 and C-26. The other splitter stream transfers material to Conveyor C-12, followed by Conveyor C-25, and into a second splitter, which divides up the material into two separate streams that feed into a screen (Screen S-3 and Screen S-4). Each screen is a three-deck inclined screen (i.e., 3 layers of mesh), used to separate materials into different sizes. The 3/8" size material from both screens discharges into Conveyor C-17, followed by Conveyor C-20, to feed Product Pile 1. The 3/16" size material from both screens discharges into Conveyor C-18, followed by Conveyor C-19, to feed Product Pile 2. The 3/4" size material from both screens discharges into reversible Conveyor C-27, which generally drops material into Conveyor C-16 to feed Product Pile 3. Conveyor C-27 also has the capability of transferring material into conveyor C-11 for further size reduction in Crusher CR-1. The undersize material from Screen S-3 discharges into Conveyor C-23, while undersize material from Screen S-4 discharges into Conveyor C-22. These material streams combine following transfer into Conveyor C-24 to feed Product Pile 4.

All screens at the Twin Peaks Rock and Stone Aggregate Plant are controlled via water-based wet suppression (fogging). The feed and majority of conveyor transfer points at the plant also include water-based wet suppression (e.g., water sprays), or are controlled by the moisture carryover from upstream transfer points.

4.3.22.2 Cotton Field Primary and Overland Plant

Figure 8-18 depicts the material flow in the processes described in this section. Operations at the Cotton Field Primary and Overland Plant begin with excavation of the Cotton Field Pit via front-end loader. Any mining faces that will be excavated are sprayed with water throughout the day before it is mined by the loader. Material is then transferred into a vibrating grizzly (F-2). Oversize material from the grizzly feeds a jaw crusher (CR-2) to reduce rock size. Both the grizzly undersize material and the crusher CR-2 discharge feed Conveyor C-30, followed by drops into Conveyors C-31 and 32, respectively, which feed Screen S-5. The oversize material from Screen S-5 is transferred into Conveyor C-33, which feeds a jaw crusher (CR-3) for further rock size reduction. The Crusher CR-3 discharge re-enters Screen S-5 via Conveyor C-34. The Screen S-5 undersize material drops into Conveyor C-35, which transfers material through a series of conveyors (C-36 through C-44 and C-29) to feed a storage pile (currently referred to as Cotton Field Storage Pile).

The screen at the Twin Peaks Rock and Stone Aggregate Plant is controlled via water-based wet suppression (fogging). The grizzly feed and majority of conveyor transfer points at the plant also include water-based wet suppression (e.g., water sprays), or are controlled by the moisture carryover from upstream transfer points.

4.3.23 Portable Grizzly Screen

A front-end loader is used to place low-grade limestone on a portable grizzly (R1-SGR). Undersize material that passes through the grizzly is collected in an undersize stockpile while the oversize material that slides off the grizzly deck is collected in an oversize stockpile. Subsequently, the oversize and undersize material can then be transported by loader for various uses.

Emissions from grizzly operations are typically controlled by using a water truck to wet the material prior to processing by the grizzly.

4.3.24 Fuel Burning Ancillary Equipment

The Facility includes several ancillary fuel-burning equipment units, including natural gas fired heaters and boilers, as well as generators powered by natural gas or diesel-fired engines. Some of the generators are used for emergency purposes. A list of fuel-burning equipment at the facility is provided below. Appendix A provides detailed capacity, fuel type, quantity, and emissions information.

- Diesel Emergency Generator (T1-MG1)
- Natural Gas Motor Generator (H3-K-MG)
- Natural Gas Auxiliary Engine (H3-K4-AUX)
- Natural Gas Emergency Generator (H4-MG1)
- Cotton Field Non-Emergency Generator (AGG-Gen)
- Natural Gas Boilers
- Natural Gas Water Heaters
- Natural Gas D4-RM1-HTR Heater
- Natural Gas Separator Heaters
- Natural Gas Direct Fired Heaters
- Natural Gas Elevator Heaters
- Natural Gas Unit Heaters
- Natural Gas Carpenter Shop Unit Heater
- Natural Gas Radiant Heaters
- Natural Gas Office Furnaces
- Propane Furnaces
- Natural Gas Furnaces

4.3.25 Petroleum Storage Tanks/Vessels

CalPortland utilizes a variety of petroleum storage aboveground storage tanks (ASTs) located throughout the facility to fuel vehicles and equipment. With the exception of the 50,000-gallon diesel AST, and the 2,100,000-gallon Bunker C AST, all of the storage tanks meet the definition of an insignificant activity (see Section 11). The 50,000 bbl Bunker C storage tank was taken out of service, cleaned, and all piping to and from the tank was disconnected in January of 2005. The tank is located near the tank farm, and CalPortland does not currently have plans to dismantle or remove this tank from the facility. Because it is not in use, no emissions have been calculated for this tank. CalPortland is keeping this tank in the equipment list in case it is needed in the future.

- Diesel AST, 50,000 gallons
- Diesel AST 12,000 gallons
- On- Specification Used Oil AST, 31,000 gallons
- On-Specification Used Oil (2), AST, 28,700 gallons
- Gasoline AST, 2,000 gallons
- Lube Tank (6) AST, 1,000 gallons
- Used Oil (2) AST, 2,000 gallons
- Bunker C Aboveground 50,000 bbl

5. PROPOSED PROJECT CHANGES

5.1 Authorization of Additional Kiln 4 Fuels

CalPortland is currently authorized to combust the following fuels in Kiln 4, in accordance with permit No. 85424 (113625) Condition VIII.A(1) in Attachment C: coal, coke, natural gas, No. 2 fuel oil, Bunker C oil, chopped tires, On-Specification used oil fuel, wood chips, and jet fuel. Table 5-1. Current Kiln 4 Permitted Fuels and Fuel Proportion Limitbelow presents the existing allowed fuels and corresponding fuel proportion limit.

Table 5-1. Current Kiln 4 Permitted Fuels and Fuel Proportion Limit

Fuel Type	Kiln 4 Maximum Fuel Proportion[1]
Coal	100
Coke	12
Natural Gas	100
Diesel	100
No. 2 Fuel Oil	100
Bunker C Oil	100
Chopped Tires (<6" x 6")	34
On-Specification Used Oil Fuel	41
Wood Chips	22
Jet Fuel	5

[1] Maximum Fuel Proportion is defined as the maximum percent of the actual heat input provided by a fuel component in the fuel mixture.

CalPortland proposes to authorize NHSMs to combust them in either the existing Kiln 4 burner or calciner as additional alternative fuels, including but not limited to engineered fuels, biomass fuels (including, but not limited to, construction and demolition wood, pistachio shells, almond shells and yard clippings), paper cardboard, biosolids, and dust collector bags generated on-site.

It is not expected that the combustion of the additional alternative fuels will affect the PTE from Kiln 4. CalPortland will not increase the amount of clinker produced at the kilns after the implementation of this Project change. As such, the amount of energy needed to produce the same amount of clinker will not change. The amount of each alternative fuel required to fuel the kiln is scaled to match the heat input of the authorized fuel with highest heating value on a PTE basis. This analysis is shown in Table 6a of Appendix A. Therefore, CalPortland is not requesting a change to the Kiln 4 PTE.

Additionally, CalPortland is seeking to remove all fuel proportion limits for Kiln 4 as described in the table above. These limits were historically added to the permit to enforce the emission rates established by VOC testing at the kiln in 1991 to determine the Kiln 4 VOC PTE, prior to the establishment of NESHAP LLL (National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry) in 1999. The kiln is subject to the NESHAP LLL THC limits, which require CalPortland to monitor THC (treated as VOC) emissions via Continuous Emissions Monitoring System (CEMS) and CalPortland believes this continuous monitoring is sufficient to ensure compliance with the Kiln 4's VOC PTE representation. Table 5-2 below presents the proposed language for Kiln 4 in permit Attachment C, Condition VIII(A)(1).

Table 5-2. Proposed Kiln 4 Permitted Fuels and Fuel Proportion Limit

Fuel Type	Kiln 4 Maximum Fuel Proportion
Coal	100
Coke	100
Natural Gas	100
Diesel	100
No. 2 Fuel Oil	100
Bunker C Oil	100
Chopped Tires (<6" x 6")	100
On-Specification Used Oil Fuel	100
Wood Chips	100
Jet Fuel	100
NHSMs [1]	100

[1] NHSMs meeting the provisions of 40 CFR 241 Subpart B, Identification of Non-Hazardous Secondary Materials that are Solid Wastes When Used as Fuels or Ingredients in Combustion Units (NHSM Rule). NHSM include, but are not limited to, engineered fuels, biomass fuels (including, but not limited to, construction and demolition wood, pistachio shells, almond shells and yard clippings), paper cardboard, biosolids, and dust collector bags generated on-site.

The addition of the aforementioned alternative fuels and removal of fuel proportion limits at Kiln 4 will not debottleneck any emission units upstream or downstream of the kiln but will provide CalPortland with increased flexibility of fuel options for the kiln. It is important to note that the kiln will not be physically modified because of this Project change. Additionally, no existing material handling operations are being impacted by this Project change.

5.2 Changes at Twin Peaks Rock and Stone Aggregate Plant

CalPortland is proposing to make the following changes at the Twin Peaks Rock and Stone Aggregate Plant:

- Increase the maximum processing throughput of the plant as identified below. CalPortland requests these increases be reflected accordingly in the throughput limit contained in permit Condition III.B(1) of Attachment B.
  - From 800,000 tpy to 1,400,000 tpy for conveyors B11-BC1, B11-BC2, B11-TS-BC1, and B11-TS-BC2.
  - From 800,000 tpy to 1,100,000 tpy for all other equipment at the Twin Peaks Rock and Stone Aggregate Plant.

- Pave 1,000 feet (ft) of the unpaved customer truck road segment used to transfer product from the product loading area to the facility exit. This segment is referred to as "Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant – Segment 1".
- Increase the efficiency of control on unpaved roads vehicle travel particulate emissions from the current 65% to 85% by increasing the water application intensity on unpaved road segments and implementing vehicle speed reductions of up to 25 miles per hour (mph).

- Change some of the material transfer configurations, involving some existing equipment and added equipment. The added equipment will allow CalPortland to clean the aggregate 1 prior to entering Screen S-1. The transfer for aggregate fed through Hopper 1 will remain the same until Conveyor C-2. Aggregate will drop from Conveyor C-2, where it will mix with water to remove unwanted materials like water-soluble

silts and clays prior to feeding existing Screen S-1. The undersize material discharged from the screen will pass through Fine Material Washer FM-5, where it is mixed with water to further removed undesired components, and then feeds Dewatering Screen DWS-4. The process is saturated up to this point but retains high moisture at the DWS-4 outlet. The DWS-4 discharge feeds into a splitter which sends a portion of the material into Conveyors C-3 and C-13 to feed a product pile (Washed MA Fines Stockpile). Existing Conveyor C-9 will be repurposed to receive some of the oversize S-1 material, for transfer into existing Conveyor C-5. Conveyor C-68 will be added to receive the remaining oversize S-1 material for transfer into existing Conveyor C-10. The remaining transfers at the plant remain consistent with current operations.

- Summary of new equipment:
  - Conveyor (C-68)
  - Blade mill (BM-2)
  - Fine material washer (FM-5)
  - Dewatering screen (DWS-4)
  - One (1) new splitter (Splitter 1)

- Increase the Vehicle Miles Traveled (VMTs) associated with road travel emissions from the plant due to the production increase.

- Reduction of the operating hours of baghouse TP-DC1 from 8,760 hours per year to 4,368 hours per year to reflect the true maximum hours of operation for the plant.

A PFD for these updates is provided in Appendix C.

5.3 Changes at Cotton Field Primary and Overland Plant

CalPortland is proposing to make the following changes at the Cotton Field Primary and Overland Plant:

- Increase the maximum processing throughput of the plant from 800,000 tpy to 1,100,000 tpy. CalPortland requests these increases be reflected accordingly in the permit. Historically, ADEQ has addressed the Cotton Field Primary and Overland Plant equipment as part of the Twin Peaks Rock and Stone Aggregate Plant (as identified in the permit equipment list contained in Appendix B) and the equipment has been covered by the throughput limit contained in permit Condition III.B(1) of Attachment B. However, CalPortland requests that the throughput limit for Cotton Field Primary and Overland Plant equipment be addressed in a separate condition since it is a separate aggregate process.
- Reduce the travel distance for the unpaved road segment associated with loader material transfer from the Cotton Field Pit face from 0.19 miles (mi) to 0.11 mi. This is due to the extending conveyor associated with Grizzly F-2 having the capability to extend and reduce loader travel distance to Grizzly F-2.
- Adjust the Vehicle Miles Traveled (VMTs) associated with road travel emissions from the plant due to the production increase.
- Increase the efficiency of control on unpaved roads vehicle travel particulate emissions from the current 65% to 85% by increasing the water application intensity on unpaved road segments and implementing vehicle speed reductions of up to 25 miles per hour (mph).
- Rename the Cotton Field Storage Pile to "Sand and Gravel Plant Feed Stockpile".

A PFD for these updates is provided in Appendix C.

5.4 New Manufactured Fines Plant

CalPortland is proposing to add equipment to operate a new Manufactured Fines Plant at the Facility to produce fine aggregates. CalPortland is proposing a 400,000 tpy processing throughput for the new Manufactured Fines Plant. Aggregate from stockpiles at the Twin Peaks and Cotton field Primary and Overland Plant is picked up by a Caterpillar 988 front-end loader with a 15-ton bucket, driven along a new 500-foot unpaved road segment, and transferred into the plant feed hopper (Hopper 4). Material is transferred to Conveyor C-45, which feeds Crusher CR-4 for size reduction, and the CR-4 discharge is transferred to Conveyor C-46 to feed Screen S-6. The Crusher CR-4 particulate emissions will be controlled by a new baghouse (ID TBD). The oversize S-6 material is transferred to Conveyors C-70 and C-69 to re-enter Crusher CR-4 for achieving the necessary size reduction. The S-6 undersize material is fed through a series of three conveyors (C-71, C-72, and C-73) to feed Manufacture Fines Pile 2.

Screen S-6 will be controlled via water-based wet suppression (fogging). The majority of conveyor transfer points at the plant also include water-based wet suppression (e.g., water sprays), or will be controlled by the moisture carryover from upstream transfer points.

- Summary of new equipment:
  - Hopper 4
  - Six (6) new conveyors (C-45, C-46, and C-69 through C-73)
  - Existing portable crusher (renamed to CR-4)
  - Existing portable screen (renamed to S-6)

A PFD for the Manufactured Fines Plant is provided in Appendix C.

5.5 New Wash Plant

CalPortland is proposing to add equipment to operate a new Wash Plant at the Facility to produce washed aggregate, general construction aggregates, and sand of various size specifications for concrete and mortar applications. Material will typically be fed by an underground reclaim tunnel. Aggregate from the Sand and Gravel Plant Feed Stockpile and the Manufacture Fines Pile 2 at the Cotton Field Primary and Overland Plant and Manufactured Fines Plant, respectively, will drop into material into Conveyor C-47 via two separate feeders. The portion of the conveyor associated with these drops (i.e., the tunnel) will be enclosed and located below the stockpiles. In the case of tunnel conveyor system downtime, such as for maintenance purposes, CalPortland would feed material via loader (Caterpillar 988 front-end loader with a 15-ton bucket) from these feed sources along a 250-foot unpaved road segment and into Hopper 5. Material would then be transferred through Conveyors C-66 and C-67 for transfer into Conveyor C-47.

Conveyor C-47 then processes the aggregate through a blade mill and series of, sizing screens, fine material washers, and dewatering screens to clean and separate the aggregate from its associated fines. Ultrafine material leftover from the Wash Plant separation steps is processed into a sludge in a high-rate thickener (HRT-60). The sludge is then pumped to the Cotton Field Pit, where it is used to fill the mined parts of the pit. As a result of ultrafine losses, CalPortland expects sales from the new Wash Plant to total 1,100,000 tons per year out of the Plant's total throughput of 1,500,000 tons per year. Product from the Wash Plant would be transferred by front-end loaders into the customer trucks area for off-site shipment or secondary stockpiles for storage. CalPortland conservatively expects loadout to customer trucks to occur up to 90% of Plant operating time and secondary stockpiling to occur up to 15% of Plant operating time. Customer truck loading is done by a Caterpillar 982 XE front-end loader with a 12 ton-bucket payload traveling over a new 30-foot (3 meter) unpaved road segment. Customer truck travel will occur on the existing Segment 1 and Segment 2 associated with Twin Peaks as described in section 5.2. Secondary stockpiling is accomplished by a Caterpillar

982 XE front-end loader with a 12-ton bucket traveling over a new 500-foot (152 meter) unpaved road segment.

Summary of new equipment:

- Hopper (Hopper 5)
- Conveyor C-47 with under-pile tunnel feed section (Wash Plant Feed Tunnel Conveyor)
- Twenty-one (21) new conveyors (C-48 through C-67)
- Blade mill (BM-1)
- Screens (S-7 and S-8)
- Material washer (CMW-1)
- Classifying tank (Classifying Tank)
- Fines material washers (FM-1 through FM-4)
- Dewatering screens (DWS-1 through DWS-3)
- High rate thickener (HRT-60)
- Creation of seven (7) new stockpiles:
  - ASTM #4 Rock Material Pile
  - ASTM #8 Rock Material Pile
  - Washed 1/4" Material Pile
  - Birdseye Material Pile
  - Washed Fine Sand Material Pile
  - Mortar Sand Material Pile
  - Concrete Sand Material Pile

A large portion of the process will be wet (i.e., saturated), which will minimize emissions from the added equipment. Additionally, the transfers downstream of dewatering screens will still retain a high aggregate moisture content which will control emissions. The majority of other conveyor transfer points at the plant also include water-based wet suppression (e.g., water sprays), or will be controlled by the moisture carryover from upstream transfer points.

A portion of the Wash Plant aggregate and sand products will also be used as feed material for the new CBP described in Section 5.7.

A PFD for the new Wash Plant is provided in Appendix C.

5.6 D2 Bypass

As part of the MPR pending approval, CalPortland proposes to add a new clinker route, the "D2 Bypass", in the Clinker Cooler 4 handling system. This change would add:

- A new triverter gate slide valve (H2-PF2-DG2)
- A new belt conveyor (H2-BC3)
- A new dust collector (H2-DC5)

Material will only flow in one direction at a given time from the triverter gate, and the throughput of the system will not increase as a result of this change. This transfer flexibility is built into the emission calculations for the system. The added equipment will create a new transfer route and allow clinker to be transferred from triverter gate slide valve H2-PF2-DG2 into a new belt conveyor (H2-BC3), which would be controlled by existing

dust collector H2-DC2. The material would then drop into existing belt conveyor C2-BC8, and emissions would be controlled by a new dust collector (H2-DC5). Transfer downstream of C2-BC8 remains unchanged.

A PFD for the D2 Bypass is provided in Appendix C.

5.7 Concrete Batch Plant

The proposed Wash Plant will produce ASTM #4, ASTM #8, and ASTM #57 washed concrete aggregates as well as ASTM C33 concrete sand. CalPortland proposes to construct and operate a CBP that can use a portion of the new wash plant aggregate and sand products as feed material to produce up to 561,600 tons per year (tpy) of concrete based on a proposed maximum operating schedule of 12 hours per day, 6 days per week, and 52 weeks per year.

The ingredients for the CBP plant include aggregate (various types would be used), sand, cementitious materials (cement and additives), and water. The proposed CBP would source cement from the portland cement plant at the Facility, while various cementitious additives such as pozzolan and fly ash would be outsourced and brought onsite via powder trains (i.e., articulated trucks transporting bulk powders). The cement and cementitious additive feed materials for CBP production would be pneumatically loaded into and stored in silos (BP-S-1 through BP-S-4) and a horizontal guppy (BP-S-5) controlled by dust collectors (BP-BH-1 through BP-BH-4). As mentioned above, the aggregate and sand material would be sourced from the new wash plant product piles. A loader would transfer the materials to hoppers (H1 through H4), which then convey the materials to an overhead aggregate bin for storage (4 compartments) via ground feed belts (BP-C-1 through BP-C-4). On the aggregate side for each batch, the overhead bins drop material into an aggregate weigh hopper (4 bins) which transfers the necessary amounts of aggregate and sand into an Erie Strayer MP-11C central mixer controlled by a dust collector (BP-DC-1). On the cementitious material side for each batch, the cement and additives are gravity fed from the silos through a cement weigh batcher to measure necessary quantities. The cement and additives are then transferred onto a conveyor which delivers the materials to the central mixer. In addition to the control from BP-DC-1, all the water for the concrete mixing process is sprayed into the central mix drum as the other materials loaded to minimize particulate emission generation. The concrete product will be transported offsite via mixer trucks.

6. ALTERNATE OPERATING SCENARIOS

There are no alternate operating scenarios or products proposed. Changes to the operations at CalPortland requiring authorization via notification or permit revisions will be properly addressed through the applicable permitting requirements.

7. VOLUNTARILY ACCEPTED EMISSION LIMITS

Identification of the voluntary limitations previously accepted by CalPortland and currently included in Class I Air Quality Permit No. 85424(113625) are presented in Table 7-1. CalPortland proposes changes to certain voluntary limits in Table 7-1Table 7-1Table 7-1. These proposed changes are also reflected in a redline version of the Facility permit in Appendix B.

Identification of the limitations previously accepted by CalPortland through Consent Decree 4:10-CV-00573-DCB and currently included in Class I Air Quality Permit No. 85424(113625) are presented in Table 7-2. CalPortland proposes to retain the previously accepted voluntary limitations in Table 7-2.

Table 7-1. Previously Accepted Voluntary Limits

Attachment Reference	Current Permit Condition Reference	Description	Proposed Changes with this Application?	Proposed Changes
Attachment "B"	Condition II.B.1(d)(1)	Maintain the plant road segments paved in 1991, 1992, 1995, 1996, and 2023 in a paved condition. Permittee shall maintain records identifying these paved road segments.	Y	CalPortland proposes for the road segments proposed to be paved in this application to be added to the permit condition, with a paving date of 2027.
Attachment "B"	Condition II.B.1(e)(1)	Operate at all times in conformance with the Dust Control Plan approved by ADEQ. The Dust Control Plan is designed to achieve a 65% control efficiency for: (1) all active roads at the quarry; (2) the unpaved sections of the road from Avra Valley road to Twin Peaks Road; (3) the unpaved sections of the roads from the Canal to Avra Valley Road; and (4) the active unpaved roads at the cement plant (East Road, West Road, Coal/Coke Storage Area Road, Central Control Road, and Reclaimer Road).	Y	Increase the control efficiency requirement for the unpaved road segments associated with aggregate operations to 85%, to be achieved from a combination of watering and vehicle speed restrictions. Aggregate operations include: ► The Twin Peaks Rock and Stone Aggregate Plant, ► The Cotton Field Primary and Overland Plant, ► The Manufactured Fines Plant, ► The Wash Plant, and ► The CBP. An updated dust control plan is provided in 16.Appendix I.
Attachment "B"	Condition III.B.1	Limit the processing of rock in the Twin Peaks Rock and Stone Aggregate Plant to no more than 800,000 tons per 12-month rolling period.	Y	Increase the maximum processing throughput of the Twin Peaks Rock and Stone Aggregate Plant and the Cotton Field Primary and Overland Plant operations. For the Twin Peaks Rock and Stone Aggregate Plant, increase the maximum processing throughput as follows. • From 800,000 tpy to 1,400,000 tons in any 12-month rolling period for conveyors B11-BC1, B11-BC2, B11-TS-BC1, and B11-TS-BC2. • From 800,000 tpy to 1,100,000 tons in any 12-month rolling period for all other equipment at the Twin Peaks Rock and Stone Aggregate Plant. For the Cotton Field Primary and Overland Plant operations, increase the maximum processing throughput from 800,000 tons per 12-month rolling period to 1,100,000 tons per 12-month rolling period, as proposed by the Project.
Attachment "B"	Condition III.D.2.b(2)	Use water spray bars or equivalent control equipment on all crushers and screens associated with rock crushing and screening activities subject to the NSPS requirements whenever the equipment is operating (or the material must be adequately wet to minimize visible emissions to the extent practical).	N	N/A
Attachment "B"	Condition VI.B	Burn natural gas in all the heaters and boilers listed in Section XXIV of Equipment List of Class I Air Quality Permit #61522.	N	N/A
Attachment "C"	Condition VI.G.1.a	Limit total emissions of CO from Kilns 1, 2, 3, and Kiln 4 in-line kiln/raw mill to no more than 5,069 tons per year (rolling twelve-month total calculated at the end of each month).	N	N/A
Attachment "C"	Condition VI.G.1.b	Limit total emissions of NOX from Kilns 1, 2, 3, and Kiln 4 in-line kiln/raw mill to no more than 5,144 tons per year (rolling twelve-month total calculated at the end of each month).	N	N/A

Attachment Reference	Current Permit Condition Reference	Description	Proposed Changes with this Application?	Proposed Changes
Attachment "C"	Condition VII.B.1.c	Limit emissions from dust collectors according to the following: Dust Collector H2-DC2: $PM/PM_{10} \leq 0.01$ lb/hr Dust Collector C2-DC3: $PM/PM_{10} \leq 0.334$ lb/hr Dust Collector D4-DC1: $PM/PM_{10} \leq 1.671$ lb/hr Dust Collector D4-DC2: $PM/PM_{10} \leq 0.668$ lb/hr Dust Collector F2-DC4: $PM/PM_{10} \leq 0.062$ lb/hr Dust Collector AC-DC1: $PM/PM_{10} \leq 0.373$ lb/hr Dust Collector CM-DC17: $PM/PM_{10} \leq 0.497$ lb/hr Dust Collector D2-DC4: $PM/PM_{10} \leq 0.166$ lb/hr	N	N/A
Attachment "C"	Condition VIII. A(1)	Contains fuel proportion limits for fuels authorized to be combusted at Kilns 1 through 4.	Y	CalPortland proposes to remove the fuel proportion limits in this condition. These limits were historically added to the permit to enforce the emission rates established by VOC testing at the kiln in 1991 to determine the Kiln 4 VOC PTE, prior to the establishment of NESHAP LLL (National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry) in 1999. The kiln is since subject to the NESHAP LLL THC limits, which requires CalPortland to monitor THC (treated as VOC) emissions via Continuous Emissions Monitoring System (CEMS) and CalPortland believes this continuous monitoring is sufficient to ensure compliance with the Kiln 4's VOC PTE representation.
Attachment "C"	Condition XI.B	Operate and maintain the Iron Stockpile three-sided windbreak in a manner consistent with safety and good air pollution control practices for minimizing emissions.	N	N/A

Table 7-2. Consent Decree Limitations

Attachment Reference	Current Permit Condition Reference	Voluntary Limitation		Proposed Changes with this Application? (Y/N)	Proposed Changes
		Type	Description		
Attachment "B"	Condition II.B.1.c	Emission Limitation	Limit visible emissions from the low-grade and High- grade Limestone Storage Piles to 20% opacity.	N	N/A
Attachment "C"	Condition VI.B.1.a(4)	Emission Limitation	Limit emissions from Dust Collector H5-%-GB to 0.008 gr/dscf PM_{10}.	N	N/A
Attachment "C"	Condition VII.B.1.d	Emission Limitation	Limit emissions from Dust Collector D2-1-DC1 to 0.005 gr/dscf PM_{10}.	N	N/A

Attachment Reference	Current Permit Condition Reference	Voluntary Limitation		Proposed Changes with this Application? (Y/N)	Proposed Changes
		Type	Description		
Attachment "C"	Condition VII.B.1.e	Emission Limitation	Limit emissions from the following dust collectors to 0.005 gr/dscf PM_{10}: Dust Collectors C2-DC2, C2-DC3, C2-DC4, C2-DC5, C2-DC6, C2-DC7, C2-DC8, C2-DC9, C2-DC10, C2-DC11, C2-DC12, C2-DC13, D2-DC1, D2-DC3, D2-DC4, D2-DC5, D2-DC6,D2-DC7, F2-DC1, F2-DC4, D4-DC1, D4-DC2, AC-DC1, CM-DC17.	N	N/A
Attachment "C"	Condition VII.B.2.c	Emission Limitation	Limit visible emissions from the D4 Raw Mill Additive Feed Hopper (D4-HOP) to 10% opacity.	N	N/A
Attachment "C"	Condition VII.B.2.d	Emission Limitation	Limit visible emissions from the D4 Raw Mill Rejects Bin (D4-SB1) to 20% opacity.	N	N/A
Attachment "C"	Condition VII.B.3.b.(1)	Operational Limitation	Use water sprays as needed on the D4 Raw Mill Additive Feed Hopper D4-HOP to comply with the emission limits.	N	N/A
Attachment "C"	Condition VII.B.3.c.(1)	Operational Limitation	D4 Raw Mill Rejects Bin D4-SB1 shall be an enclosed bin which is controlled through the raw mill system.	N	N/A

8. PROCESS FLOW DIAGRAMS

The process flow diagrams (PFDs) showing the existing processes at the facility are contained in this section. Figure 8-1 displays an overview of current operations at the Rillito Facility. Figure 8-2 through Figure 8-18 provide the material flow through the current major processes at the Facility. Appendix C provides the Project PFDs.

Figure 8-1. Current Facility-Wide Process Flow Diagram

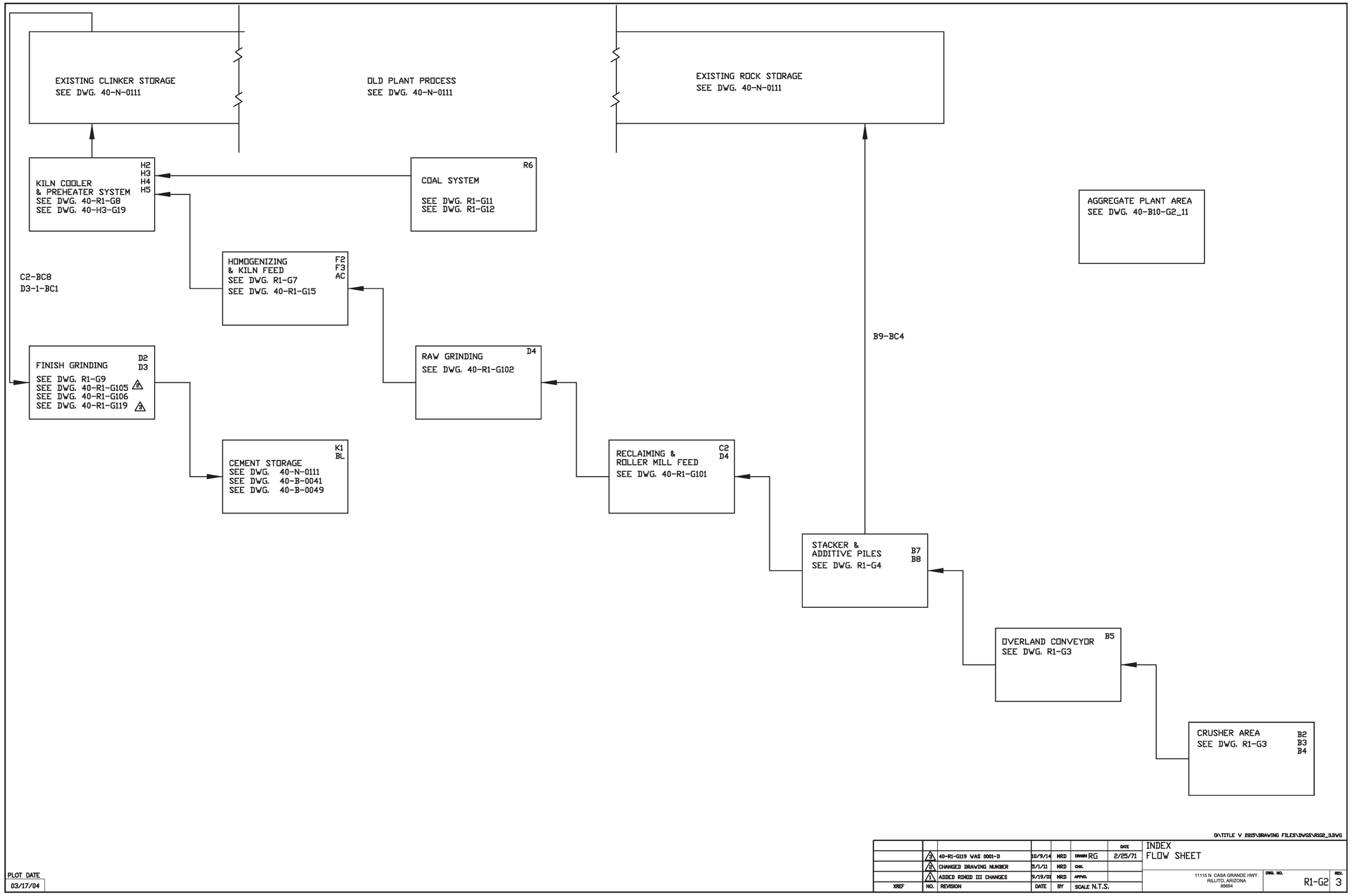


Figure 8-2. Quarry Crusher Area and Overland Conveyor System

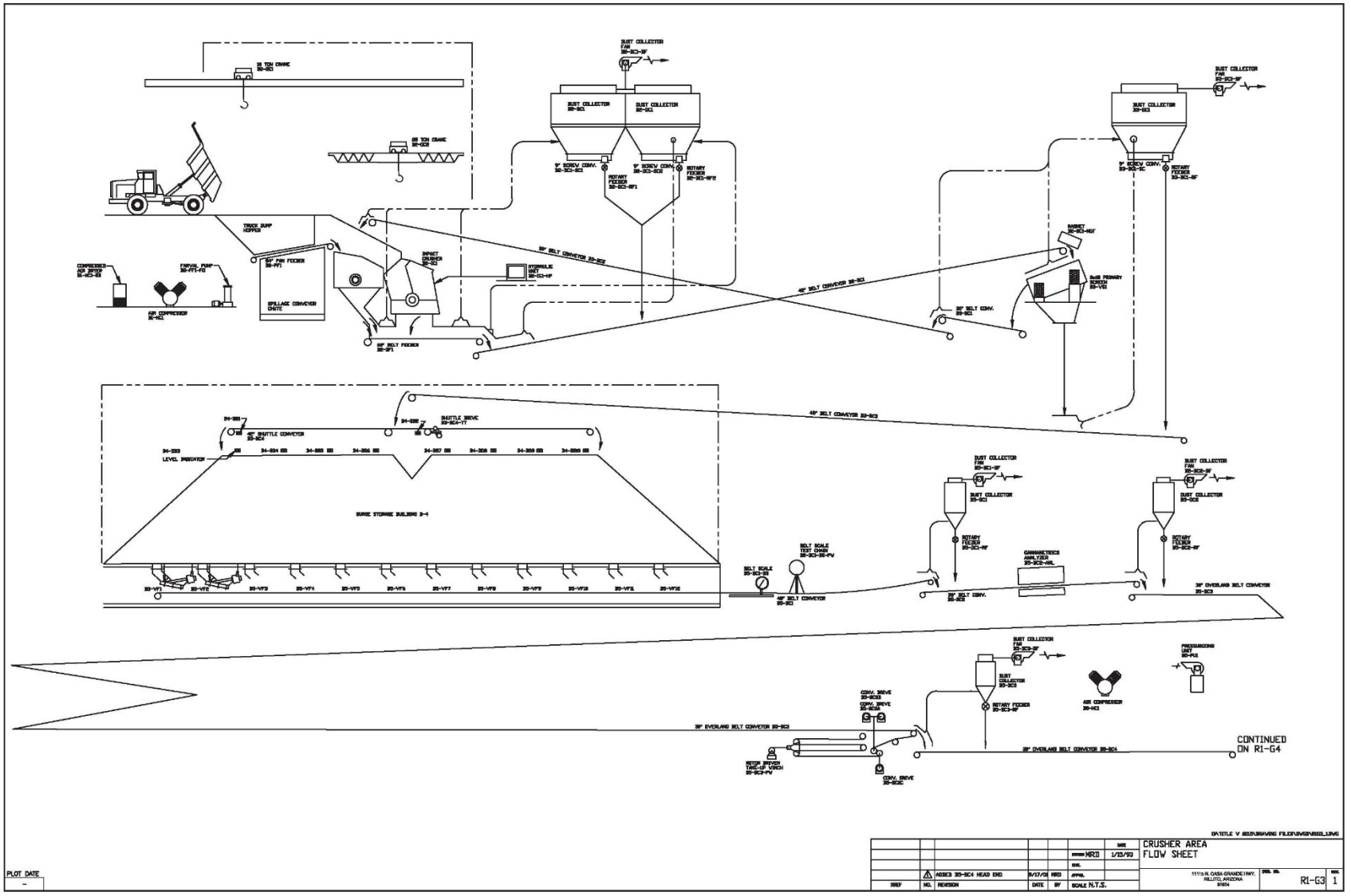
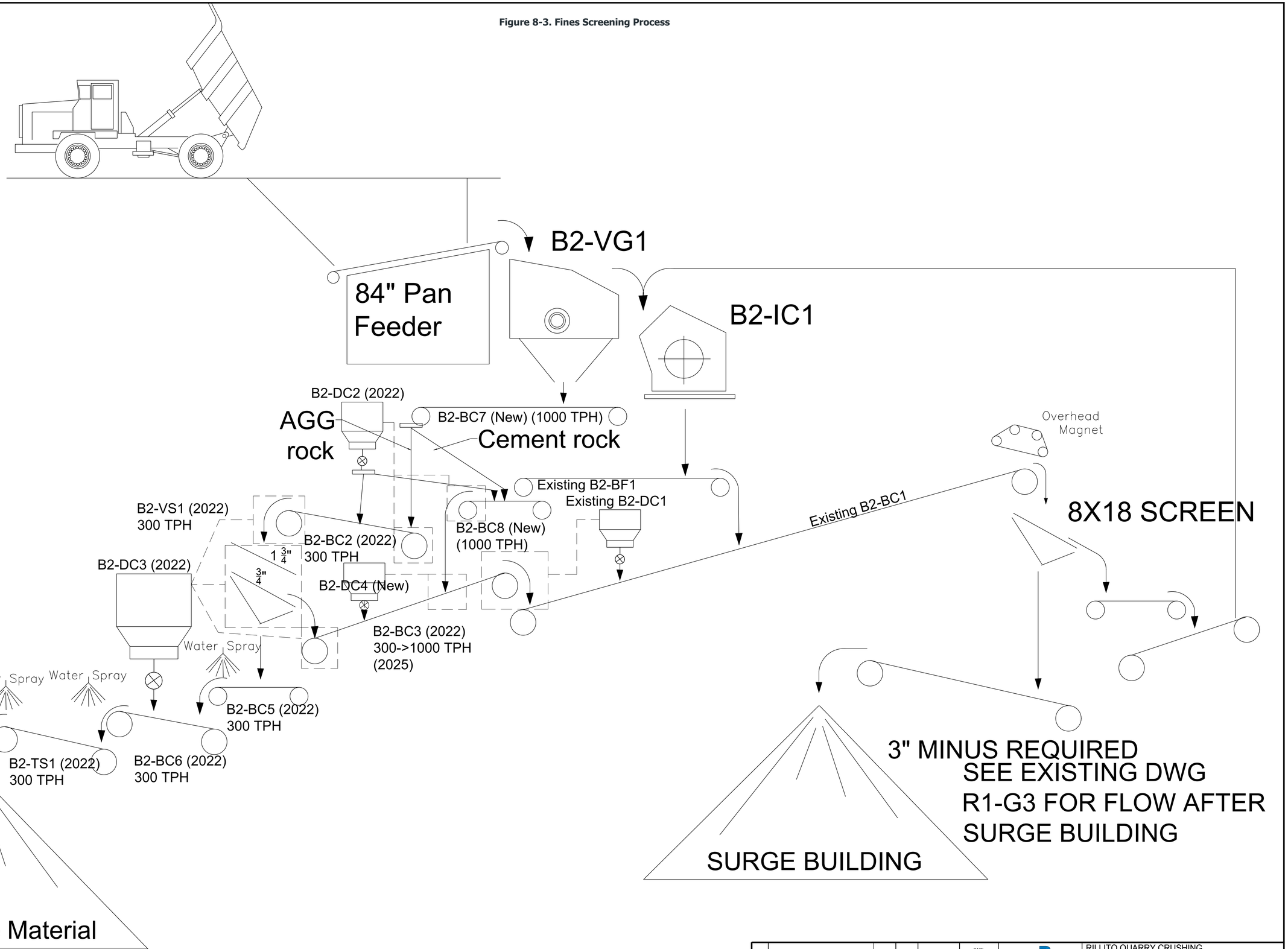


Figure 8-3. Fines Screening Process



NO.	REVISION	DATE	BY

DRAWN NMM 12/16/2022
CHK.
APPVD.
DATE
SCALE AS NOTED

CALPORTLAND
2025 E. FINANCIAL WAY
GLENDORA, CA 91741

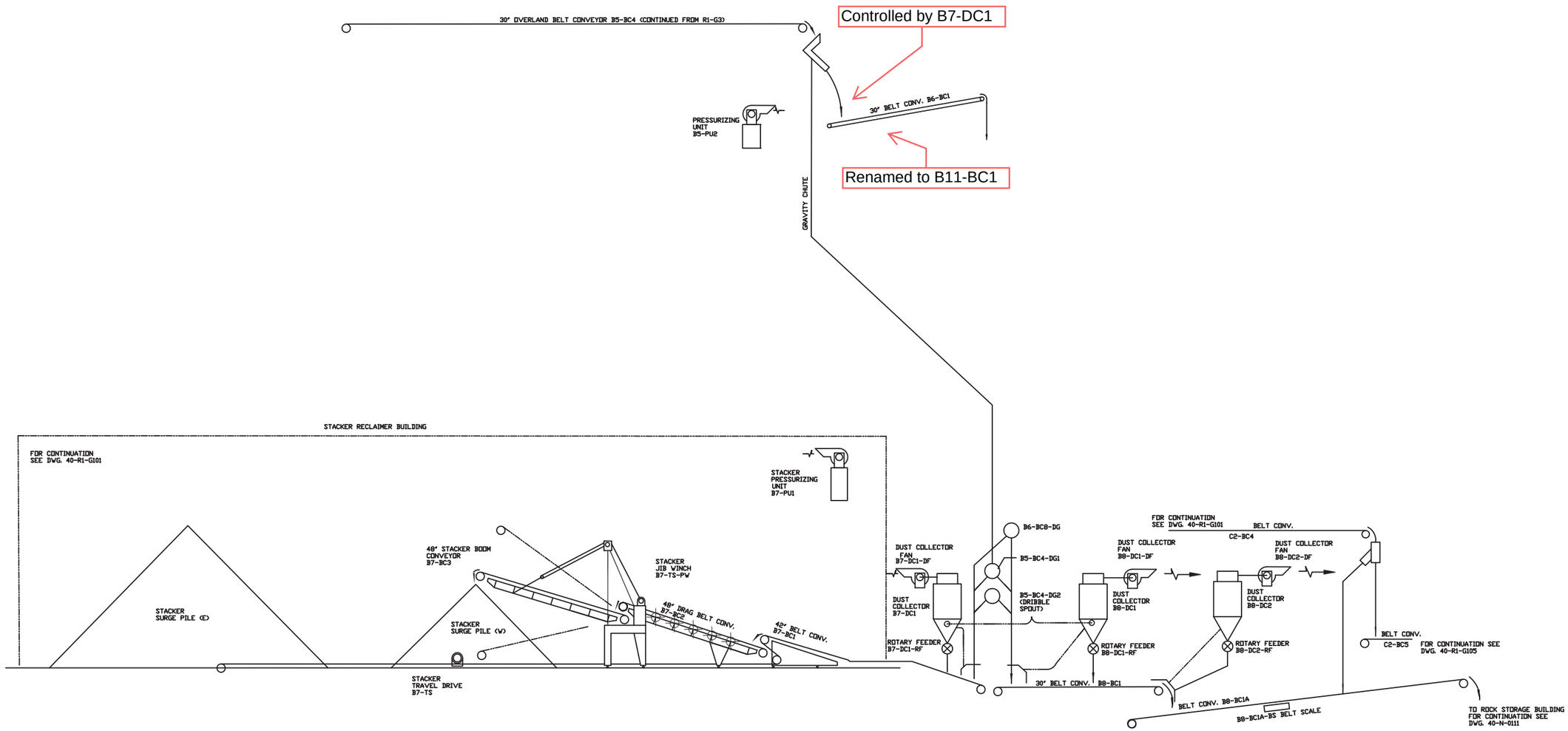
RILLITO QUARRY CRUSHING
SCREEN PLANT ADDITION FLOW

DWG. NO. XXXXXXX

REV.

PLOT DATE
12/16/2022

Figure 8-4. Rock Storage



D:\TITLE V 2015\DRAWING FILES\DWGS\R1G4_3.DWG

						DATE
	3	MERGED 40-R1-G100	9/19/01	MRD	DRAWN RDG	
	2	SAMPLE PLANT REMOVED	9/17/01	MRD	CHK.	
	1	DIGITIZED	1/15/93	MRD	APPVD.	
XREF	NO.	REVISION	DATE	BY	SCALE N.T.S.	

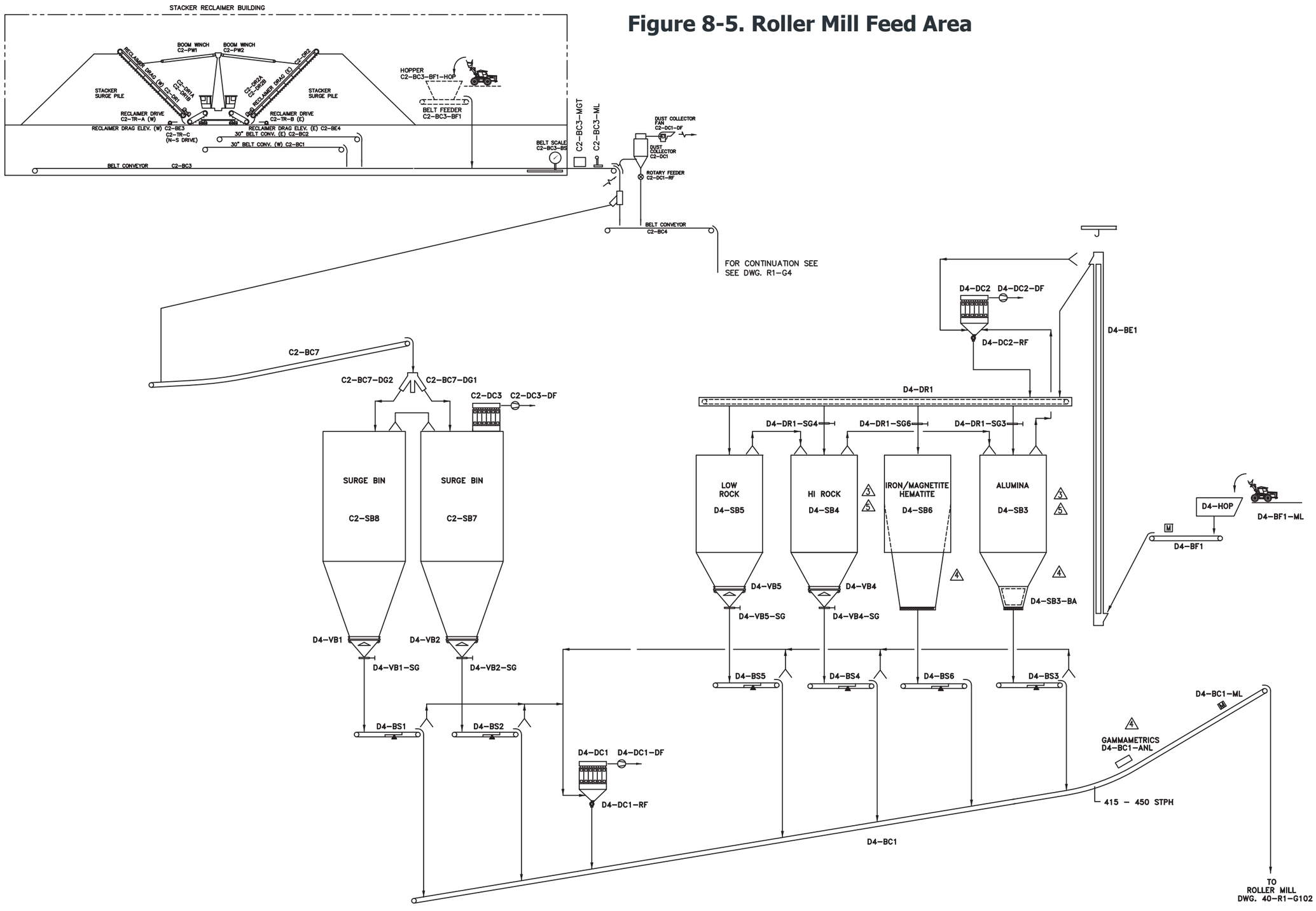
ROCK STORAGE FLOW SHEET

11115 N. CASA GRANDE HWY. RILLITO, ARIZONA 85654

DWG. NO. R1-G4 | REV. 3

PLOT DATE

Figure 8-5. Roller Mill Feed Area



O:\TITLE V 2015\DRAWING FILES\DWGS\4R1G101_5.DWG

REFERENCES		REFERENCES	
DWG. NO.	TITLE	DWG. NO.	TITLE

REVISIONS						
NO.	DESCRIPTION	BY	APP'D	DATE	CLIENT
5	CHANGED SB3 & SB6 MATERIALS	MRD		7/16/10	

REVISIONS					
NO.	DESCRIPTION	BY	APP'D	DATE	CLIENT
0	APPROVED FOR CONSTRUCTION	BLC	HUSS	8/14/99	SARRIS
1	AS BUILT	AB	HUSS	4/17/00	HUSS
2	ADDED RECLAIMER BUILDING	MRD		9/19/01	
3	SWITCHED SB3 & SB4 MATERIAL	MRD		12/6/04	
4	CHANGED BIN BTTMS. & ADDED ANALYZER	MRD		12/6/04	

SCALE: NTS	DATE
DESIGNED BY POLYSIUS	NOV. 96
DRAWN BY POLYSIUS	NOV. 96
CHECKED BY BLC	MAR. 99
PROJECT MGR HUSS	APR. 99
CLIENT APPR. SARRIS	APR. 99

M3 Engineering & Technology Corp.
Tucson, Arizona
Tel.(520)293-1488 Fax.(520)293-8349
Hermosillo, Sonora Mexico
Tel. 011-52-62-105400 Fax.011-52-62-105404

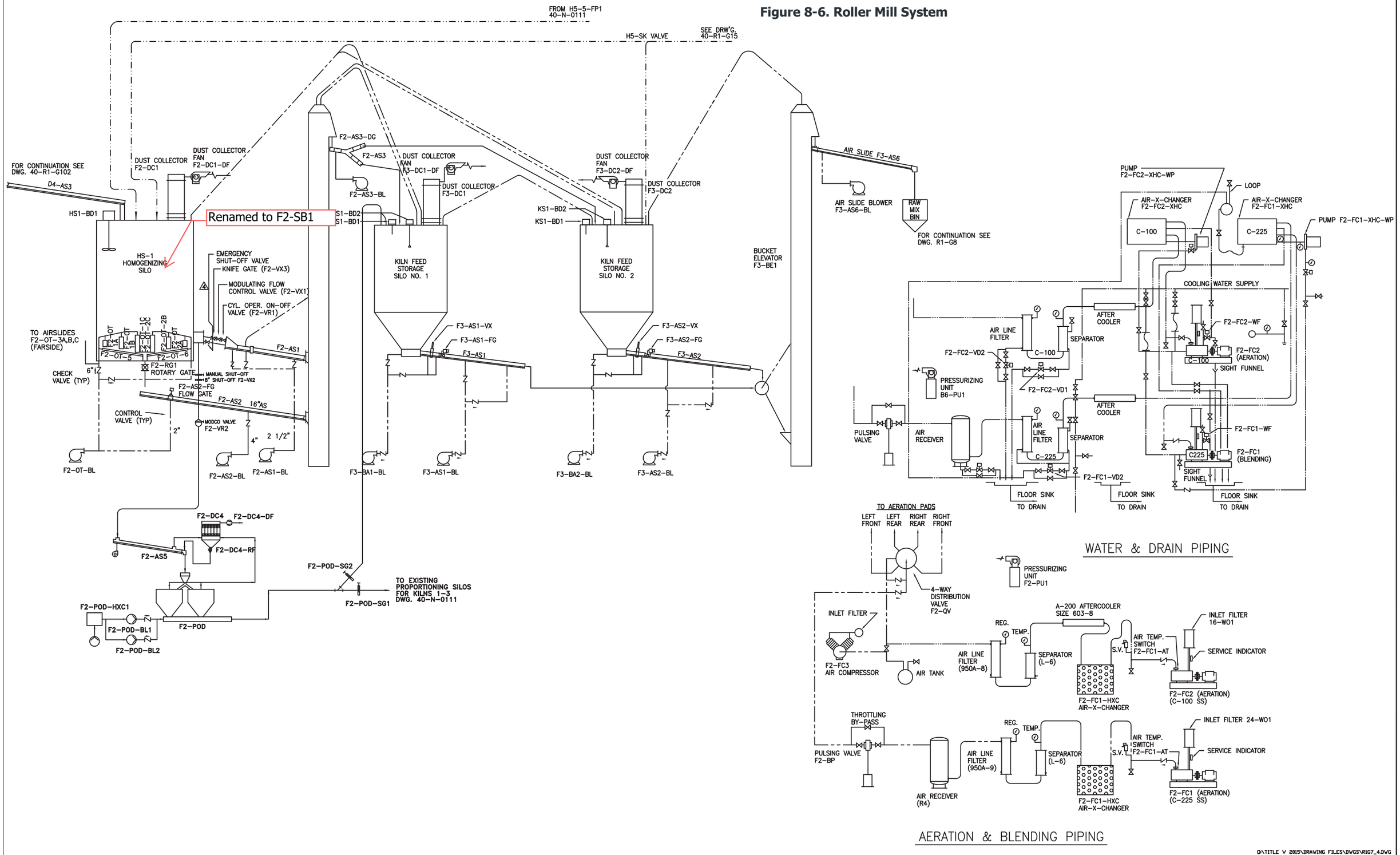
ARIZONA PORTLAND CEMENT

GENERAL PLANT
ROLLER MILL FEED AREA
PROCESS FLOW SHEET

JOB NO. M3-PN98206
DWG NO. 40-R1-G101
REV NO. 5
DATE 7/16/10

NAME: O:\1998\98206\GA\40-R1-G101.dwg LAST REV: 0 4/1/99 LAST UPDATE: APR 13, 2000 TIME: 10:02 AM BY: AB329 PLOT SCALE: 1:1

Figure 8-6. Roller Mill System



D:\TITLE V 2015\DRAWING FILES\DWGS\R1G7_4.DWG

XREF	NO.	REVISION	DATE	BY
	4	REMOVED MANUAL SHUT-OFF	4/30/14	MRD
	3	ADDED KNIFE GATE F2-VX3	9/20/11	MRD
	2	ADDED MODCO POD SYSTEM	9/19/01	MRD
	1	DIGITIZED	2/12/93	MRD

DRAWN RDG 2/2/71
CHK.
APPVD.
SCALE NONE

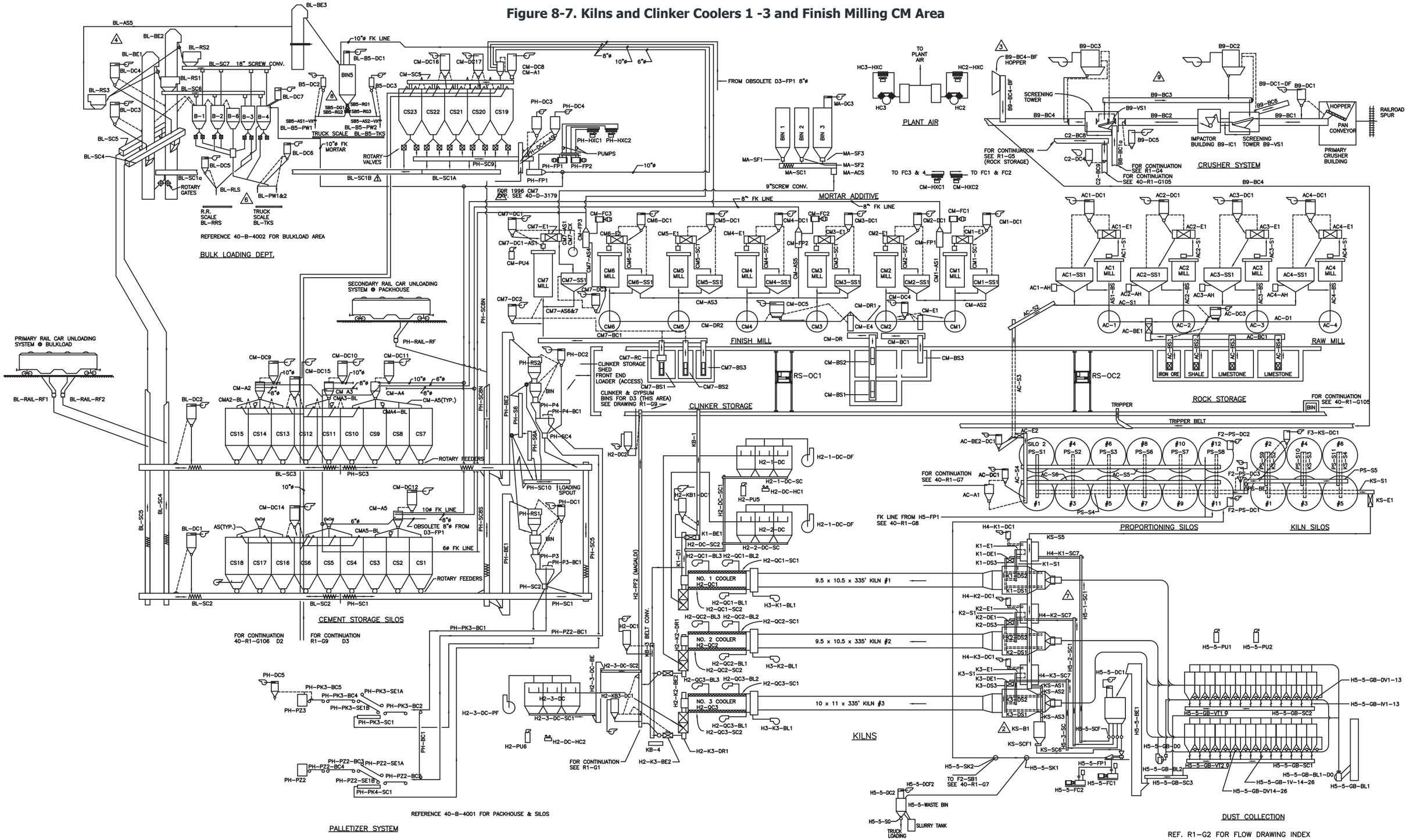
F2 & F3 HOMOGENIZING & KILN FEED SILO WATER & DRAIN AND AERATION & BLENDING PIPING

11115 N. CASA GRANDE HWY.
RILLITO, ARIZONA
85654

DWG. NO. R1-G7 REV. 4

PLOT DATE

Figure 8-7. Kilns and Clinker Coolers 1 -3 and Finish Milling CM Area



NO.	REVISION	DATE	BY
7	GENERAL TAGNAME CHANGES	9/19/13	MRD
6	REVISED PH-SC10 FLOW DISTRIBUTION	3/20/12	MRD
5	REMOVED B9-BC5	10/26/11	MRD
4	ADDED RO'S ON BL-SB5	10/29/09	MRD
3	CHANGED SCREWS & ADDED CM7 NOTE	4/13/05	MRD
2	ADDED RAIL LOADING SPOUT	9/19/01	MRD
1	REMOVED CRUSHER ADDED PAN CONV.	9/13/00	MRD
0	ADDED BL-B5-BE1 AND BL-RS3	9/27/99	MRD
	ADDED B9-BC4-BF	12/14/98	MRD
	VARIOUS PLANT UPGRADES	2/12/95	MRD
	DIGITIZED BY 4WARD TECH	11/2/94	

XREF

DRAWN MRD 1/8/88
CHK.
APPVD.
SCALE N.T.S.

O:\TITLE V 2015\DRAWING FILES\DWGS\4N0111_11.DWG

OLD PLANT (PRE 1971)
FLOW SHEET

11115 N. CASA GRANDE HWY.
RILLITO, ARIZONA
85654

DWG. NO. 40-N-0111 REV. 11

PLOT DATE

Figure 8-8. Kiln 4 and Preheater

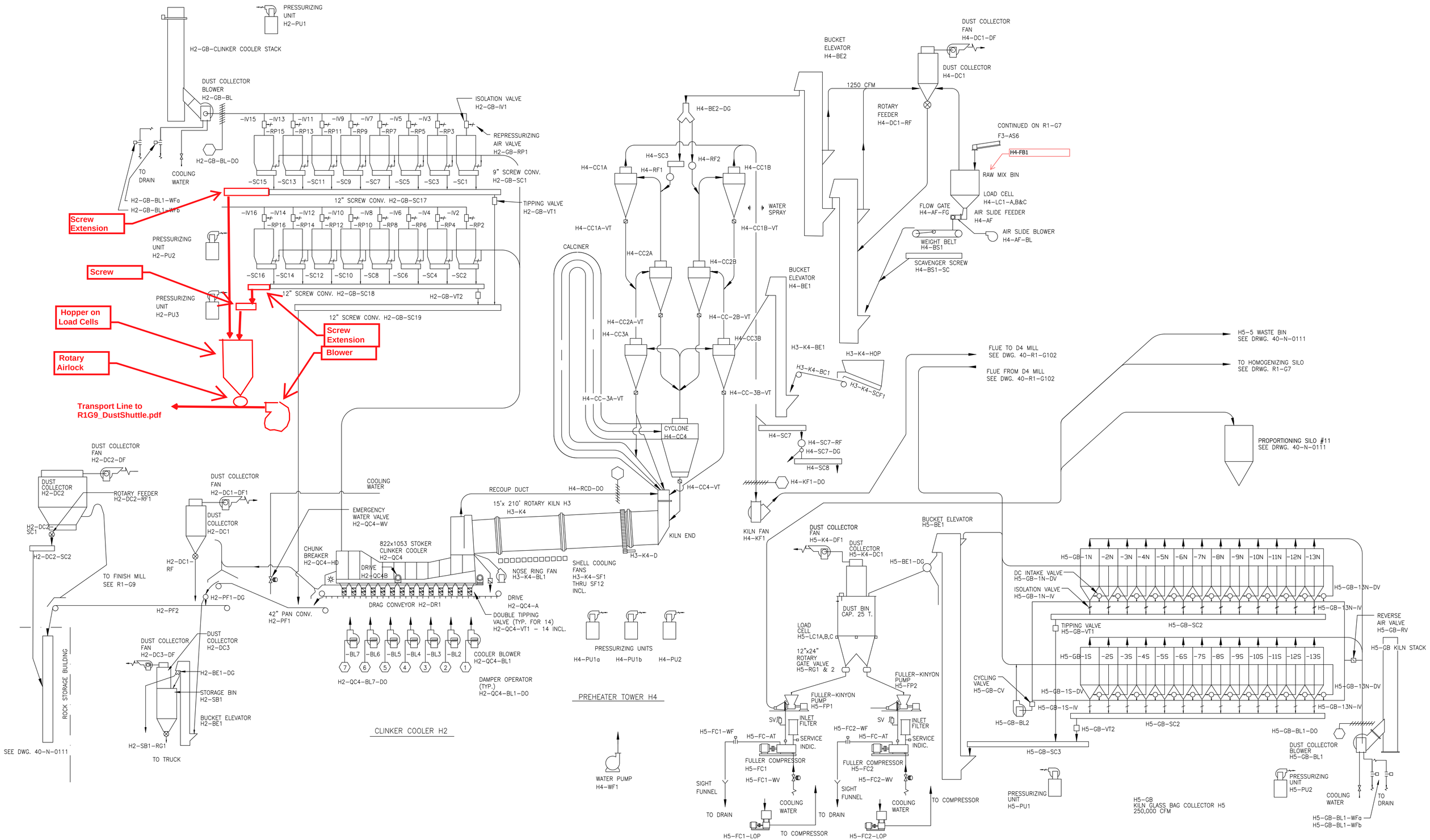


Figure 8-9. Kiln 4 Alternative Fuels Handling System

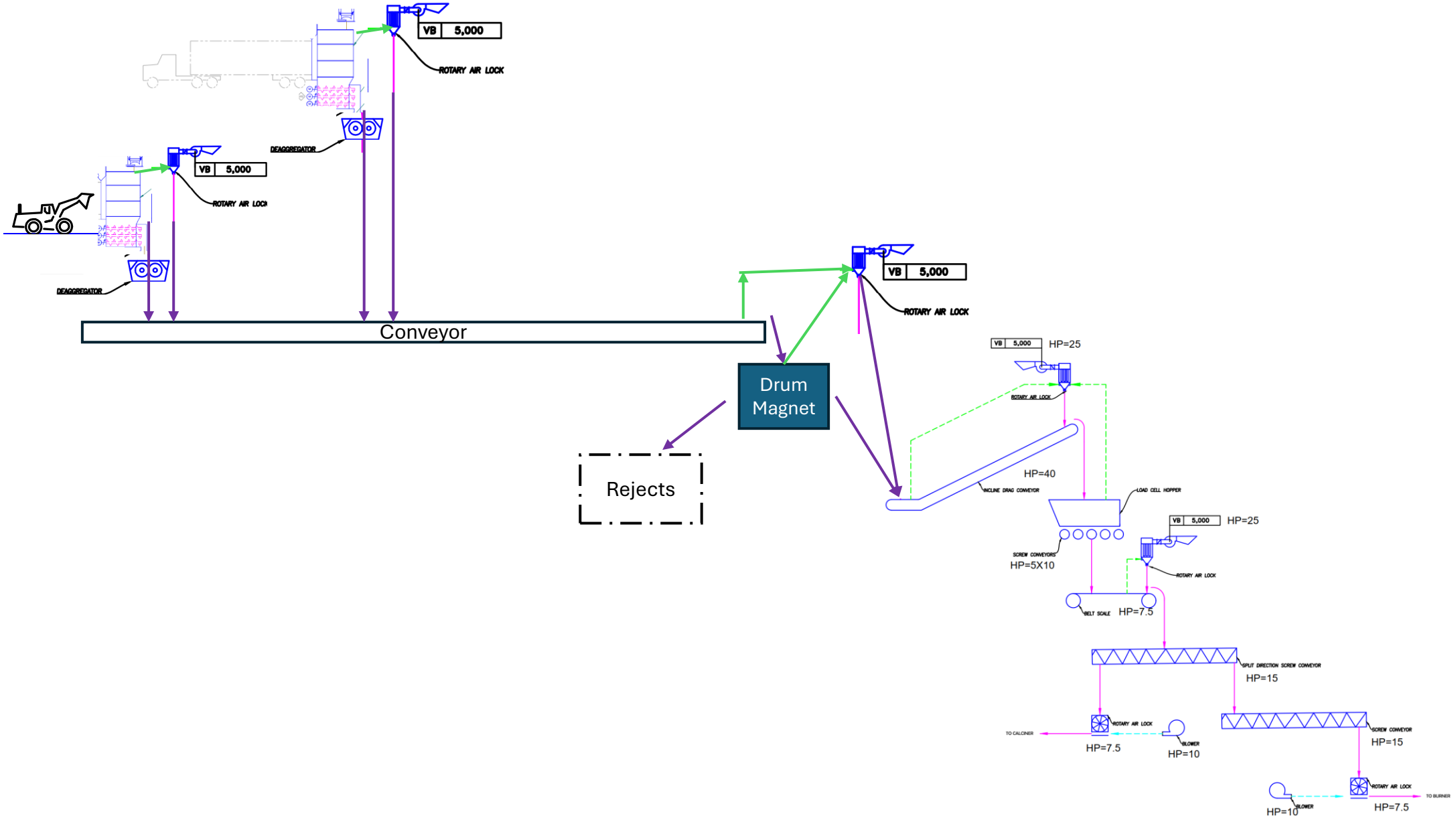


Figure 8-10. Clinker Cooler 4 and Handling System

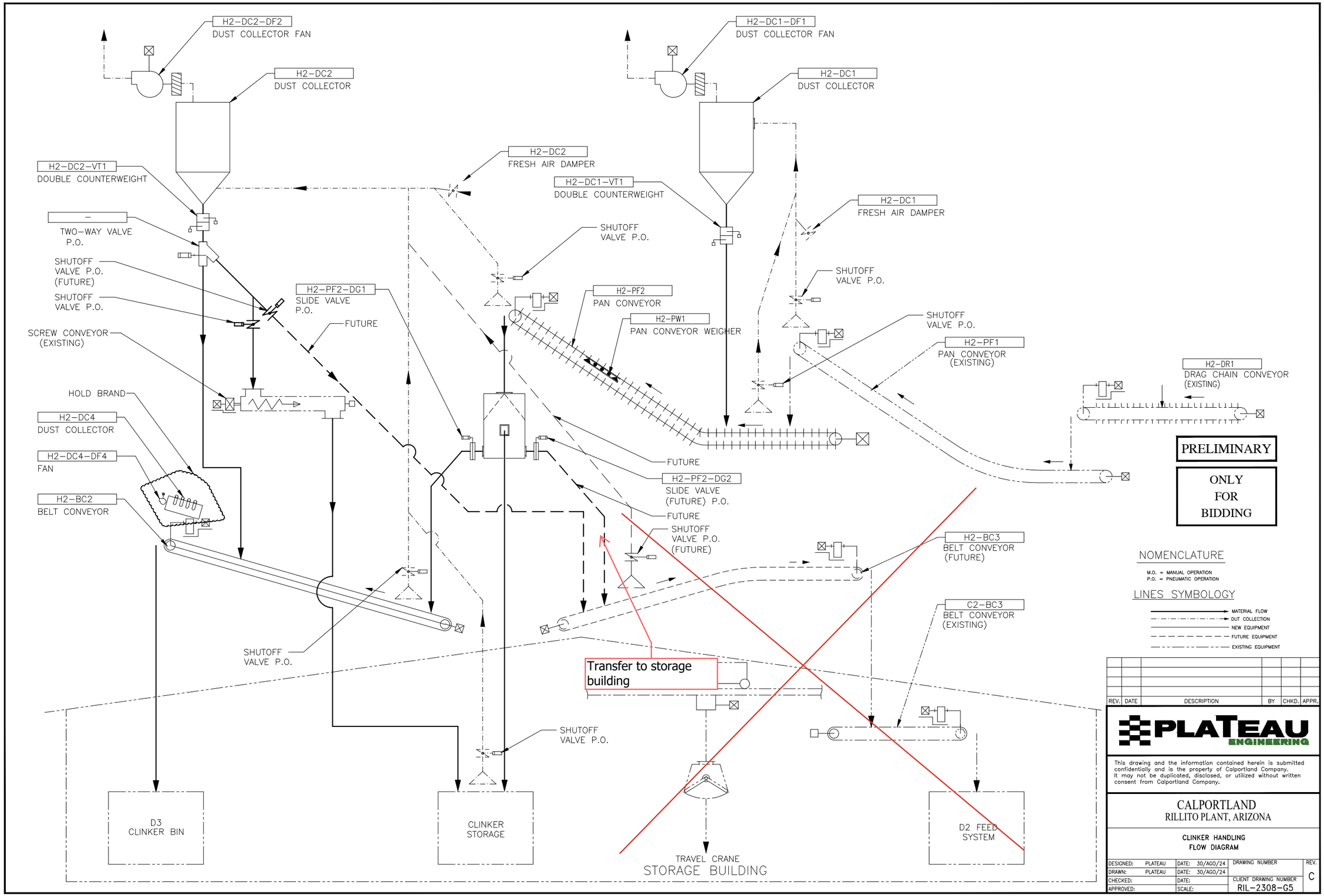
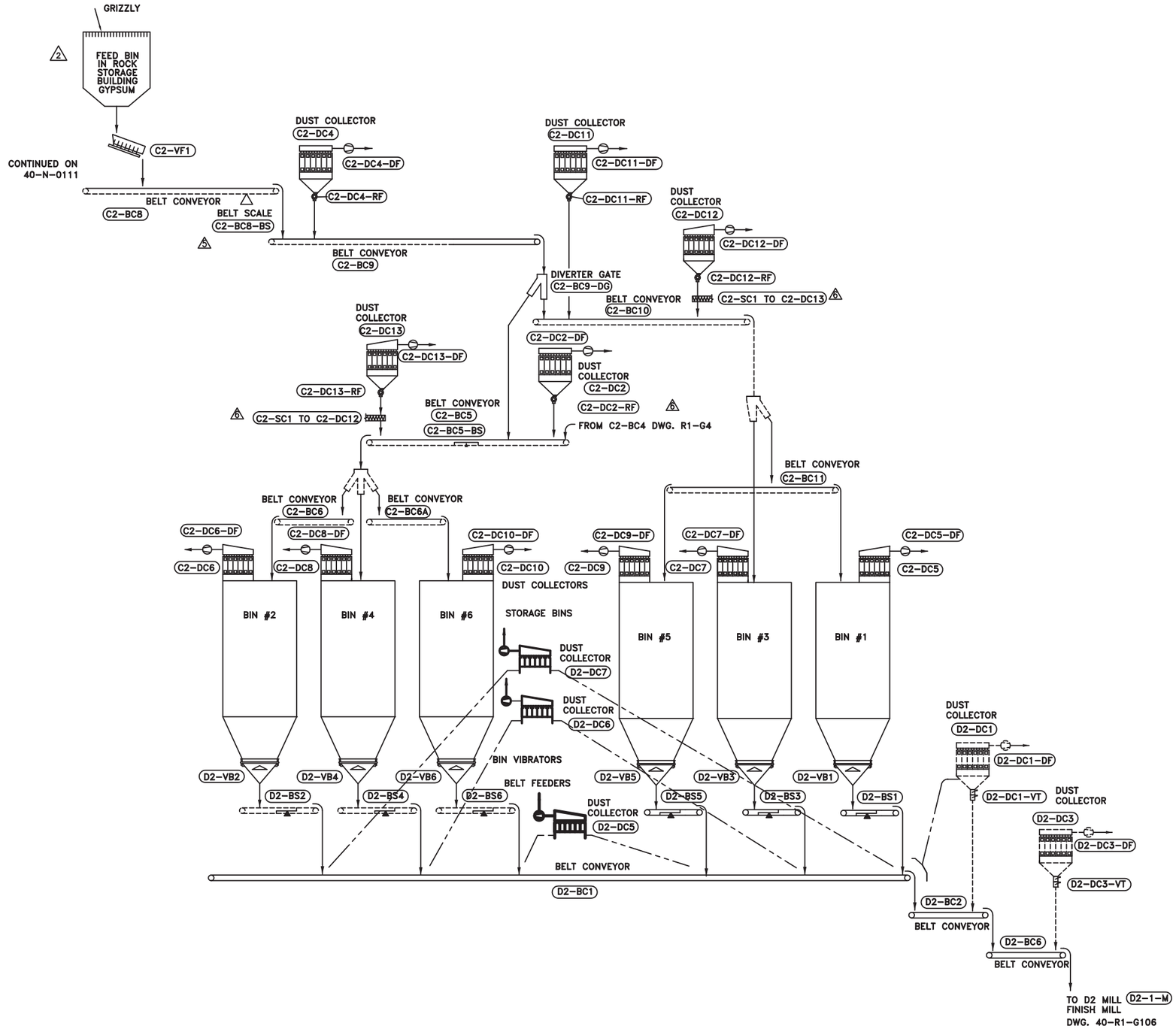


Figure 8-11. Clinker/Gypsum Transport and Finish Mill Feed Bins



O:\TITLE V 2015\DRAWING FILES\DWGS\4R1G105_5.DWG

REFERENCES		REFERENCES	
DWG. NO.	TITLE	DWG. NO.	TITLE
40-R1-G105	PROCESS FLOW SHEET, CEMENT GRINDING		

REVISIONS					
NO.	DESCRIPTION	BY	APP'D	DATE	CLIENT
5	ADDED C2-BC8-BS	MRD		6/5/14	
6	REMOVED C2-BC4 & ADDED C2-SC1	MRD		10/14/14	

REVISIONS					
NO.	DESCRIPTION	BY	APP'D	DATE	CLIENT
0	ISSUED CHECKED	JHB	HUSS	01/08/01	
1	APPROVED FOR CONSTRUCTION	AB	HUSS	03/26/01	
2	REVISED FOR FINAL EQUIPMENT	JHB	HUSS	5/4/01	
3	AS BUILT	HEB	HUSS	4/15/02	
4	ADDED D2-DC5, DC6 & DC7	MRD		5/1/11	

		DATE
SCALE: NONE		
DESIGNED BY	M3	JUN. 00
DRAWN BY	ME	JUN. 00
CHECKED BY	JHB	JAN. 01
PROJECT MGR	HUSS	JAN. 01
CLIENT APPR.		

M3 Engineering & Technology Corp.
Tucson, Arizona
Tel.(520)293-1488 Fax.(520)293-8349
Hermosillo, Sonora Mexico
Tel. 011-52-62-105400 Fax.011-52-62-105404

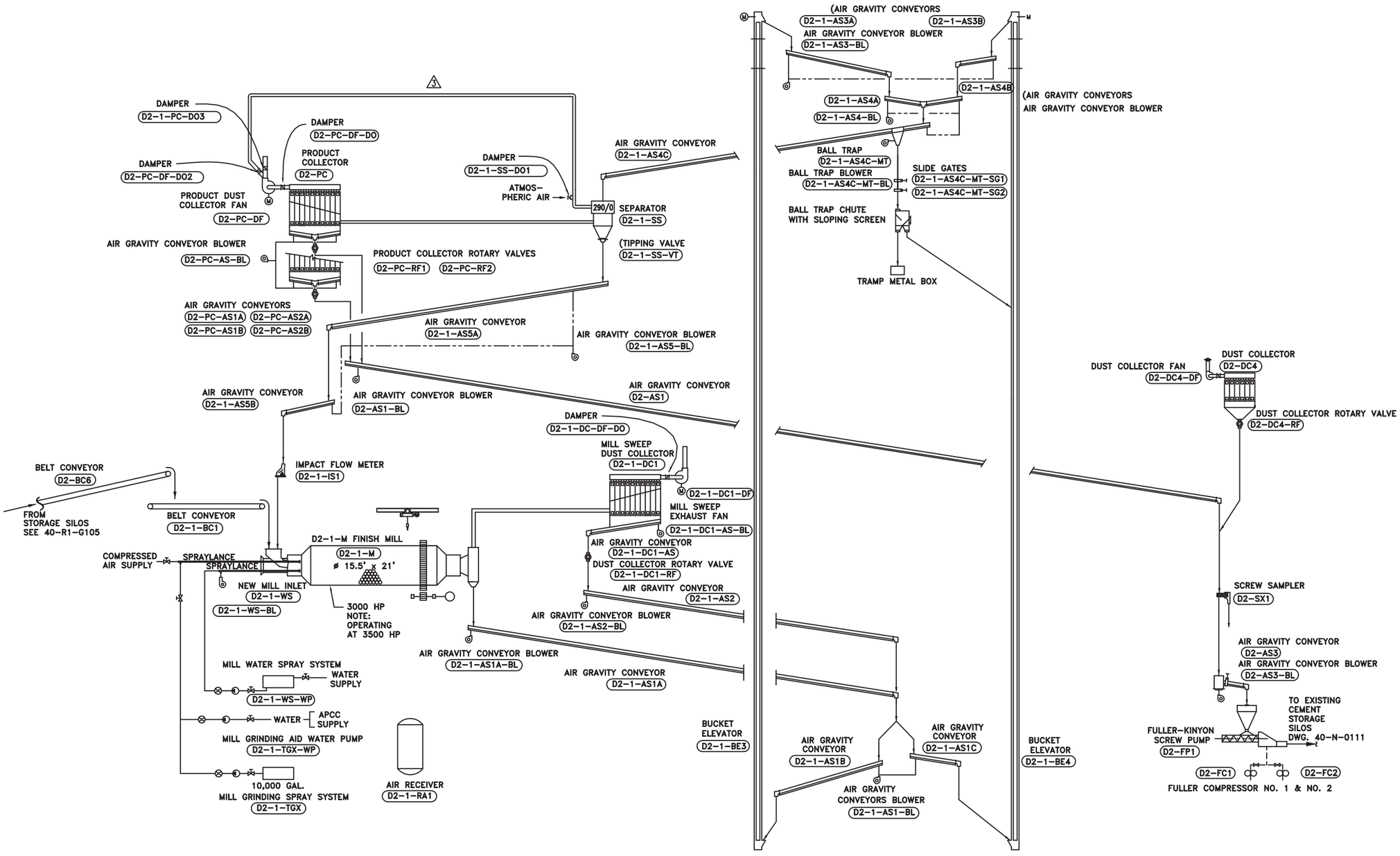
ARIZONA PORTLAND CEMENT - R3

GENERAL PLANT
PROCESS FLOW SHEET
CLINKER/GYPSUM TRANSPORT
+ FINISH MILL FEED BINS

JOB NO. M3-PN00200
DWG NO. 40-R1-G105
REV NO. 5
DATE 6/5/14

NAME: O:\2002\02026\General Arrangement\40R1G105.dwg LAST REV: 3 4/15/02 LAST UPDATE: APR 15, 2002 TIME: 10:22 AM BY: HB242 PLOT SCALE: 1:1

Figure 8-12. Finish Milling - D2 Area



O:\TITLE V 2015\DRAWING FILES\DWGS\4R1G106_3.DWG

REFERENCES		REFERENCES	
DWG. NO.	TITLE	DWG. NO.	TITLE
40-R1-G105	PROCESS FLOW SHEET, CLINKER/GYPSUM TRANS. & FINISH FD. BINS		
40-R1-G108	PROCESS FLOW SHEET, CEMENT SILOS #19 THRU #23		

REVISIONS						
NO.	DESCRIPTION	BY	APP'D	DATE	CLIENT

REVISIONS					
NO.	DESCRIPTION	BY	APP'D	DATE	CLIENT
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1	APPROVED FOR CONSTRUCTION	AB	HUSS	3/26/01	
2	ADDED DAMPER TAGNAMES	MRD	–	4/5/02	
3	ADDED HOT AIR BY-PASS DUCT	MRD	–	10/7/06	

SCALE: NONE		DATE
DESIGNED BY	M3	JUN. 00
DRAWN BY	ME	JUN. 00
CHECKED BY	JHB	JAN. 01
PROJECT MGR	HUSS	MAR '01
CLIENT APPR.		

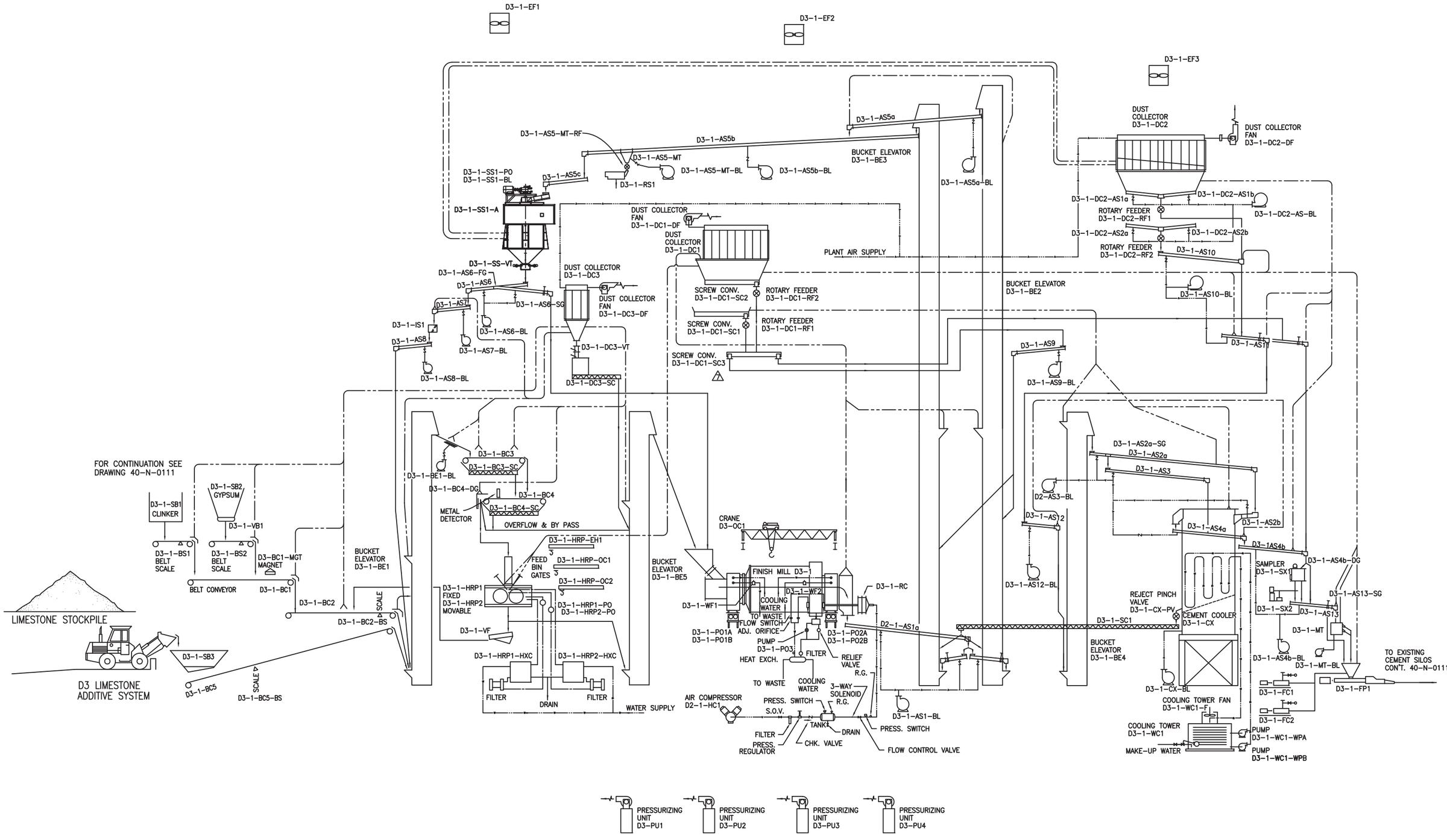
M3 Engineering & Technology Corp.
Tucson, Arizona
Tel.(520)293-1488 Fax.(520)293-8349
Hermosillo, Sonora Mexico
Tel. 011-52-62-105400 Fax.011-52-62-105404

ARIZONA PORTLAND CEMENT-R3

GENERAL PLANT
PROCESS FLOW SHEET
CEMENT GRINDING

JOB NO. M3-PN00200
DWG NO. 40-R1-G106
REV NO. 3
DATE 10/7/06

Figure 8-13. Finish Milling - D3 Area



O:\TITLE V 2015\DRAWING FILES\DWGS\R1G9_7.DWG

XREF	NO.	REVISION	DATE	BY	SCALE N.T.S.	DATE
				DRAWN MRD		10/21/98
	7	ADDED D3-1-DC1-SC3	11/28/07	MRD	CHK.	
	6	ADDED LIMESTONE BIN & BELT	6/8/04	MRD	APPVD.	

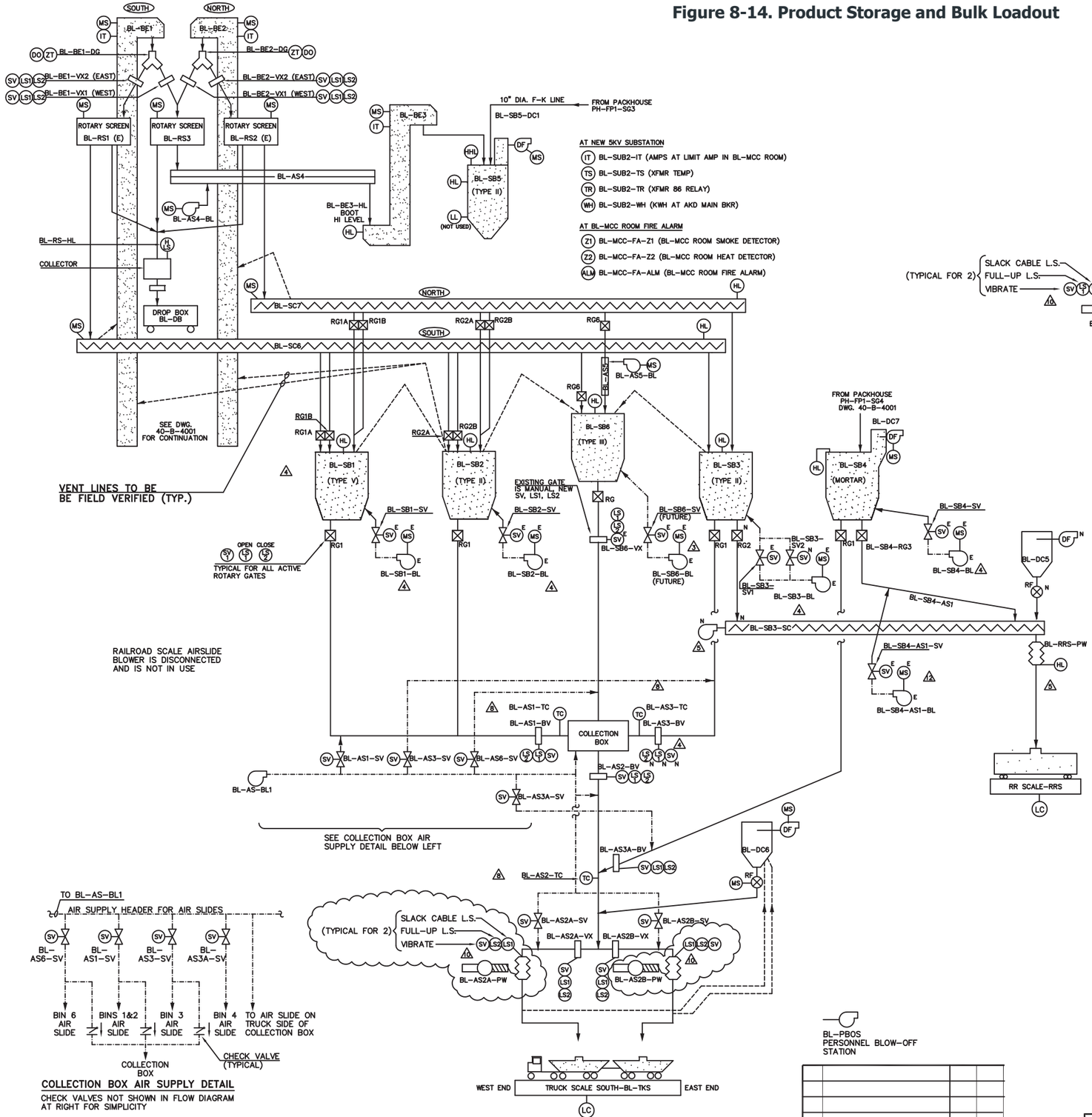
D3 FINISH GRINDING FLOW SHEET

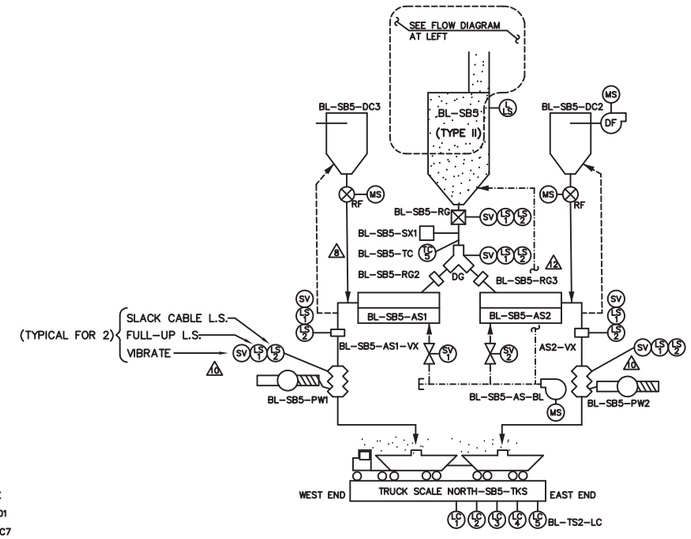
ARIZONA PORTLAND CEMENT CO.
RILLITO, ARIZONA 85654

DWG. NO. R1-G9 | REV. 7

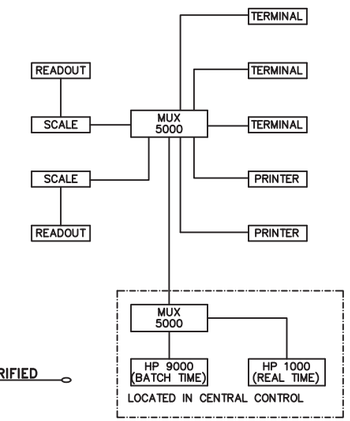
PLOT DATE

Figure 8-14. Product Storage and Bulk Loadout





BIN 5 TRUCK LOADING FLOW DIAGRAM



BULKLOAD SCALE RISER
N.T.S.

PLANT ABBREVIATIONS (PARTIAL)

AS	AIR SUPPLY OR AIR SLIDE
AT	AIR TEMP SW
B	BIN
BC	BELT CONVEYOR
BE	BUCKET ELEVATOR
BL	BULK LOAD OR BLOWER
BV	BUTTERFLY VALVE
CS	CEMENT SILO
DC	DUST COLLECTOR
DF	DUST FAN
DG	DIVERTER GATE
DH	DETECTOR HEAD
DO	DAMPER OPERATOR (BECK)
DRV	DUAL ROTARY VALVE
ES	EMERGENCY STOP
HL	HIGH LEVEL
HHL	HIGH HIGH LEVEL
HHLS	HIGH HIGH LIMIT SWITCH
HLS	HIGH LIMIT SWITCH
IT	CURRENT TRANSMITTER
LC	LOAD CELL
LI	LEVEL INDICATION
LLS	LOW LIMIT SWITCH
LS	LIMIT SWITCH
M	MOTOR
MS	MOTION SWITCH
PBOS	PERSONNEL BLOW OFF STATION
PH	PACKHOUSE
PS	PRESSURE SWITCH
PW	POWER WINCH
RF	ROTARY FEEDER
RG	ROTARY GATE
RM	ROOM
RR	RAILROAD
RRS	RAILROAD SCALE
RS	ROTARY SCREW
SB	STORAGE BIN
SC	SCREW CONVEYOR
SG	SLIDE GATE
SPT	SPOUT
SV	SOLENOID VALVE
SX	SAMPLER
TAS	TRUCK AIR SLIDE
TC	THERMOCOUPLE
TS	TRUCK SCALE
TSG	TRUCK SLIDE GATE
TSS	TRUCK SCALE SOUTH
TSN	TRUCK SCALE NORTH
VT	VALVE TIPPING
VX	CUTOFF VALVE
WF	WATER FLOW
WV	WATER VALVE
ZT	POSITION TRANSMITTER (BECK)

OLD NAME	NEW NAME
BL-ASB1	BL-AS-BL1
BL-ASB3	BL-AS-BL2

LEGEND

- ROTARY GATES (SV, LS1, LS2 NOT SHOWN FOR CLARITY)
- ROTARY GATE (SV1, LS1, LS2 NOT SHOWN FOR CLARITY)
- ROTARY FEEDER
- VALVE TIPPING, GRAVITY
- SLIDE GATE, MANUAL OR AS NOTED
- AS — SLIDE GATE, AIR OPERATED, MANUALLY ACTIVATED (AS=AIR SUPPLY)
- SV — SLIDE GATE, AIR OPERATED, SOLENOID VALVE ACTUATED
- M — SLIDE GATE, MOTOR OPERATED (LS1 & LS2 NOT SHOWN FOR CLARITY)
- ---- DUST
- E EXISTING
- F FUTURE
- N NEW

NOTES

1. PREFIXES HAVE BEEN OMITTED FROM MANY DEVICES FOR SIMPLICITY. (1)

DESIGN CRITERIA FOR TRUCK FILLING

1. WHEN THE (FUTURE) RAILROAD AIRSLIDE BLOWER IS INSTALLED, IT CAN BE A BACK-UP FOR THE TRUCK AIRSLIDE BLOWER THROUGH MANUAL VALVING (NOT SHOWN).
2. TRUCK CONTROLS NOT TO BE INTERLOCKED WITH RAIL CONTROLS.
3. SET UP CONTROLS SO THAT TRUCKS AND RAIL CARS CAN BE LOADED FROM BINS 1 THROUGH 4. BIN 6 WILL PROBABLY ALWAYS BE FOR TRUCK LOADING BECAUSE OF ITS CAPACITY.

NO.	REVISION	DATE	BY
12	ADDED BL-SB4-AS1 & BL-SB5-AS1&2-VX	10/15/14	MRD
11	CHANGED SCALE TAGNAME	7/12/10	MRD
10	REPLACE SPOUTS	11/7/08	BEH
9	REFLECTS AS BUILT CONDITIONS	9/27/02	BEH
8	THERMOCOUPLES	4/3/02	BEH
7	ADD BL-SB3-SV2	3/7/02	BEH
6	ADD BIN 5 SAMPLER	2/22/02	BEH
5	BIN 3 RAIL CAR LOADING	9/7/01	BEH
4	BIN AERATION BLOWER, BL-AS3-BV ADDITION	3/16/01	BEH
3	BIN AERATION BLOWER ADDITION ISSUE FOR OWNER REVIEW	2/2/01	BEH
2	ADDED NEW SOLENOIDS, ETC. FOR TRUCK FILLING PROJECT	11/17/99	BEH
1	AS BUILT TRUCK & RAILCAR FILLING FLOW DIAGRAM	5/7/99	BEH
0	BULKLOAD BIN 5 FILLING & BL-SC6 & BL-SC7 REPLACEMENT	10/1/97	BEH

LAST EDIT DATE = 11/10/08
ACAD DWG FILE = 40B4002

S:\B\4B4002_12.DWG

Bechtel Engineering Company
Consulting Engineers
Denver, Colorado

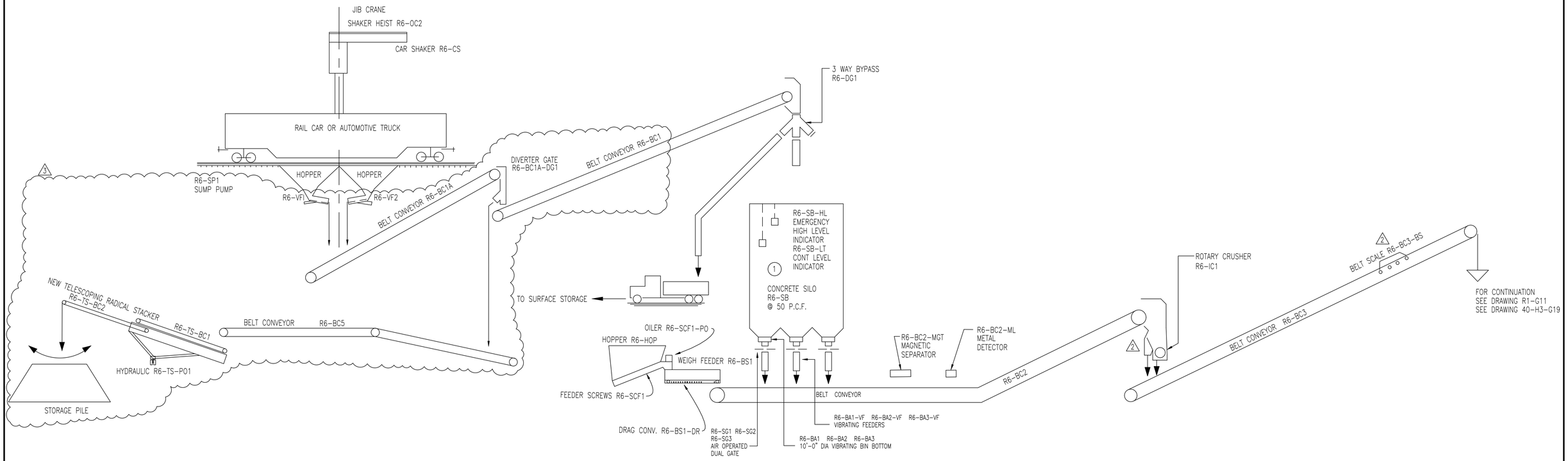
DRAWN JK/RL
CHK. BEH 9/17/99
APPVD.

BULKLOAD & TRUCK LOADING ELECTRICAL PROCESS FLOW DIAGRAM

ARIZONA PORTLAND CEMENT CO.
RILLITO, ARIZONA 85654

DWG. NO. 40-B-4002
REV. 12

Figure 8-15. Solid Fuel (Coal/Coke) System



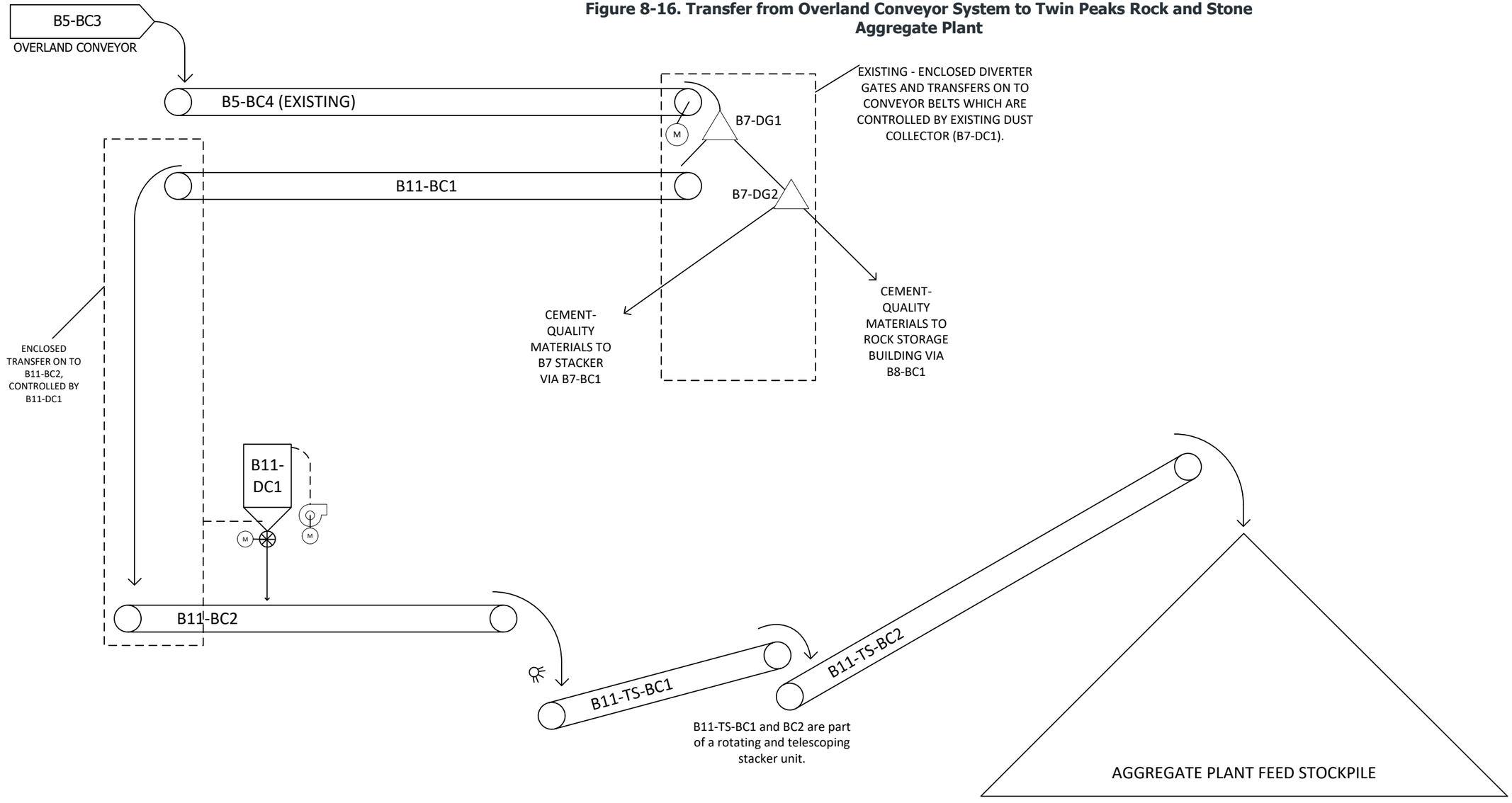
NO.	REVISION	DATE	BY
3	ISSUED FOR CONSTRUCTION	01/13/25	BMW
2	REPLACED CRUSHER R6-IC1	10/21/09	MRD
1	DIGITIZED	07/17/87	MRD

DATE
DRAWN MRD 06/04/74
CHK. – –
APPVD. – –
SCALE AS NOTED

CALPORTLAND
11115 N. CASA GRANDE
HWY. RILLITO, ARIZONA
85654

R6 COAL SYSTEM
–
PROCESS FLOW DIAGRAM
DWG. NO. R1-G12
REV. 3

Figure 8-16. Transfer from Overland Conveyor System to Twin Peaks Rock and Stone Aggregate Plant



LEGEND

THIS DRAWING IS NOT TO SCALE

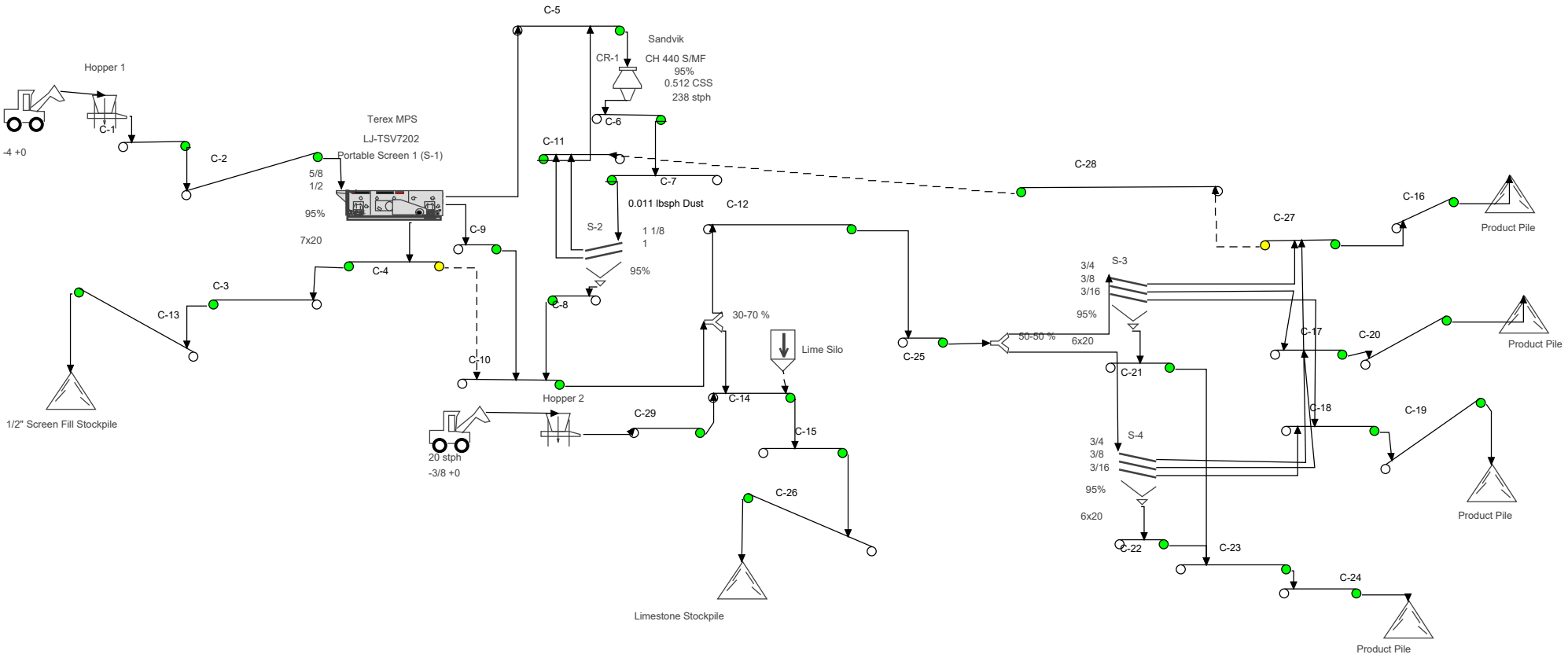
SYMBOL DENOTES A WATER SPRAY LOCATION

CALPORTLAND®

DRAWING TITLE: PROCESS FLOW DIAGRAM – AGGREGATE PLANT FEED FROM OVERLAND CONVEYOR

FIGURE 2

Figure 8-17. Twin Peaks Rock and Stone Aggregate Plant



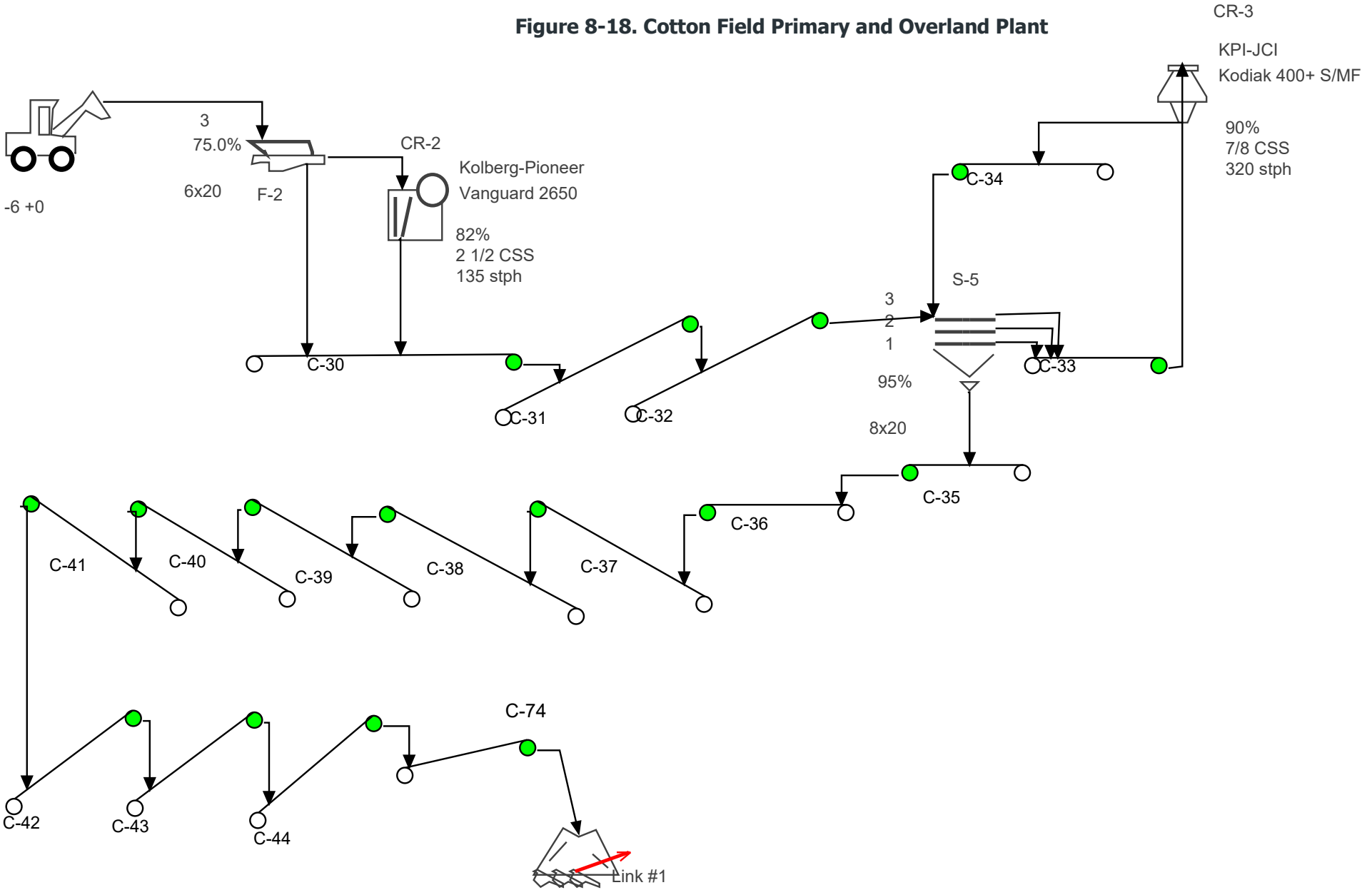
Calculation results may differ due to variations in operating conditions and application of crushing and screening equipment. This information does not constitute an express or implied warranty, but shows results of calculations based on information provided by customers or equipment manufacturers. Use this information for estimating purposes only.

All calculations performed by AggFlow. http://www.AggFlow.com

CalPortland Company

Twin Peaks to Cotton Field 03162021
Rocky Torgrimson
Twin Peaks Existing Plant: Twin Peaks Existing
Project #: 110773 Revision #: 996769 Date: July/18/2025

Figure 8-18. Cotton Field Primary and Overland Plant



Calculation results may differ due to variations in operating conditions and application of crushing and screening equipment. This information does not constitute an express or implied warranty, but shows results of calculations based on information provided by customers or equipment manufacturers. Use this information for estimating purposes only.

All calculations performed by AggFlow. http://www.AggFlow.com

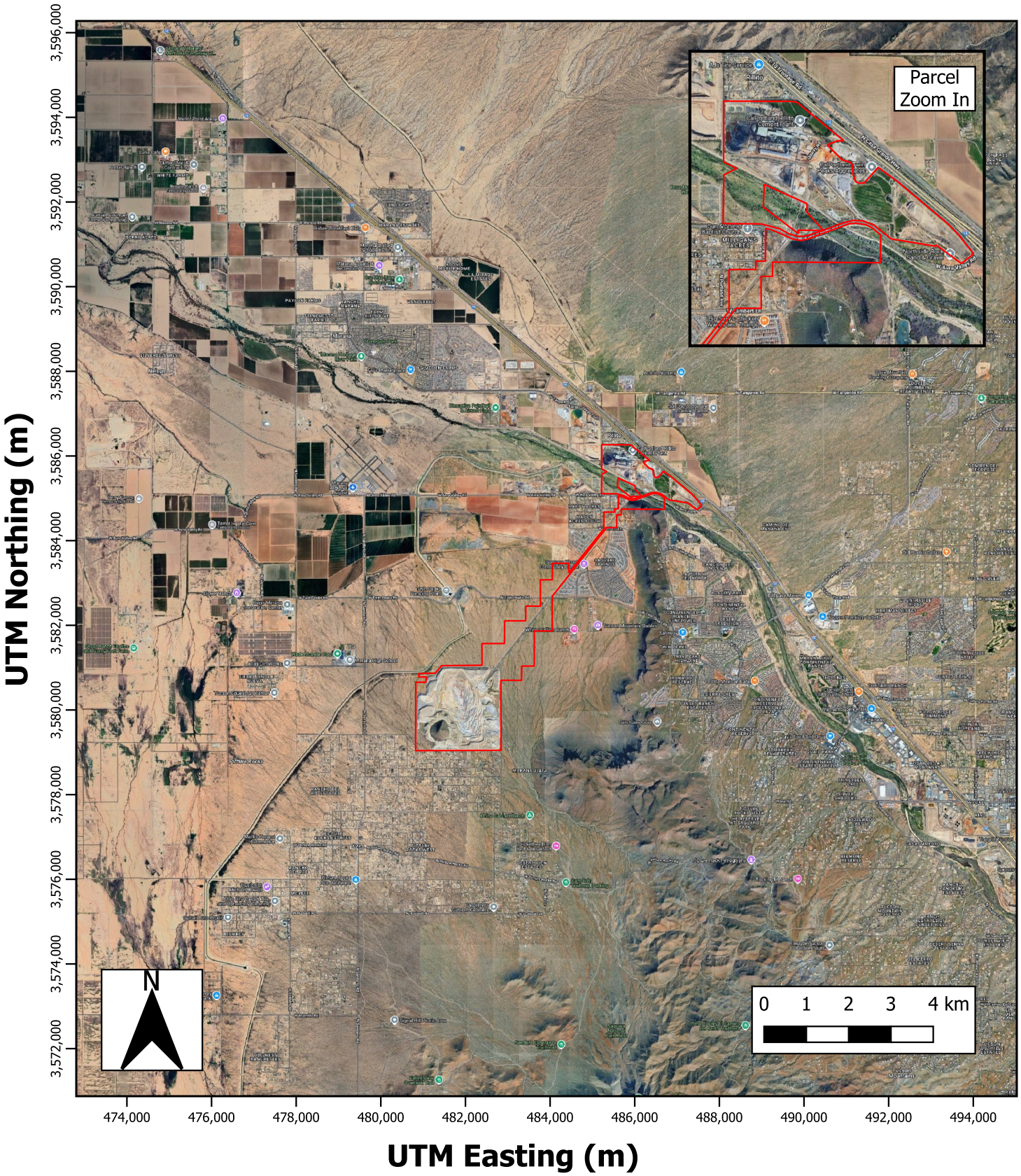
CalPortland Company

Twin Peaks to Cotton Field 03162021
Rocky Torgrimson
Cotton Field Primary and Overland:
Project #: 110773 Revision #: 996769 Date: July/18/2025

9. SITE MAPS AND DIAGRAMS

This section includes an overall site diagram in Figure 9-1. Figure 9-2 is a site layout providing the general location of the existing emission sources at the Facility. Figure 9-3 provides the location of Project emission sources associated with aggregate operations.

Figure 9-1. CalPortland – Overall Site Map



Legend

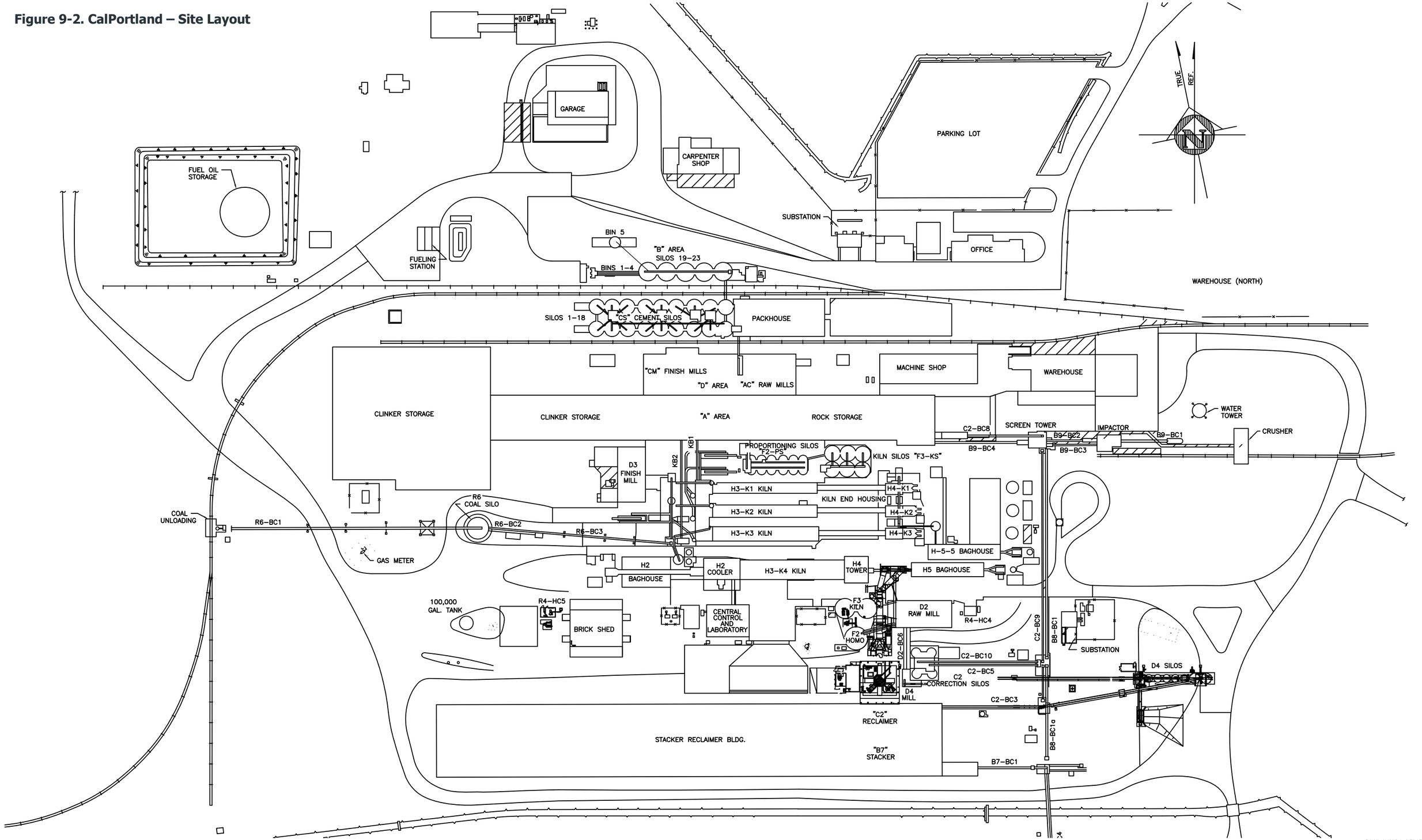
Approximate Property Boundary

All Coordinates in UTM Coordinates, Zone 12N, NAD 1983

Trinity Consultants

July 2025

Figure 9-2. CalPortland – Site Layout



						DATE	PLANT LAYOUT WITH AREA DESIGNATION	
					DRAWN MRD	6/22/87		
					CHKD.			
					APPVD.			
	1	ADDED D4 MILL & SILOS	7/31/01	MRD			ARIZONA PORTLAND CEMENT CO. RILLITO, ARIZONA 85654	DWG. NO. 40-N-0124
XREF	NO.	REVISION	DATE	BY	SCALE 1" = 80'			

Figure 9-3. Location of Project Aggregate Sources



10. EMISSIONS CALCULATION METHODOLOGY

The methodologies used to calculate the emission rates presented in this application are explained in the following sections. The maximum potential emissions are calculated using annual and maximum hourly process rates, emission factors derived from historical source testing data, emission factors derived from limits under 40 CFR 60, Subpart IIII, and emission factors provided in the *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Fifth Edition (AP-42), U.S. EPA*. Determination of the maximum process rates are presented in Section 10.1. The determination of emission factors is presented in Section 10.2. The control devices and respective control measures are described in Section 10.1.3. Detailed emission calculations are provided in Appendix A of this application.

10.1 Existing Emission Sources

In general, PTE is calculated assuming 8,760 hours of operation unless otherwise noted in the subsections below. The controlled emissions are calculated by the following equation considering the control device efficiency for emissions units that are controlled by control devices (e.g., water sprays).

$$E_{Controlled} = E_{PTE} * (1 - \%_{Control\ Efficiency})$$

10.1.1 Determination of Maximum Process Rates

Maximum process rates were determined by maximum equipment capacities, maximum annual hours of operation, or from voluntarily accepted limits that have previously been permitted as outlined in Section 7. When applicable, maximum equipment capacities upstream determined maximum process rates for downstream emission units.

10.1.2 Determination of Emission Factors

10.1.2.1 AP-42 Emission Factors and EPA Emission Factors

AP-42 emission factors were derived from the tables of various sections of the AP-42 guidance, as indicated in the Appendix A emission factor tables. Where applicable, particulate, gaseous, and HAP emission factors were derived from AP-42 for criteria. The emission calculations in Appendix A contain a column with comments and/or footnotes referencing the source for each emission factor used and how they were derived.

Since the last renewal application, the PTE calculations for vehicle travel on paved and unpaved roads have been revised to accurately reflect average weight of vehicles used and maximum estimated annual VMTs.

10.1.2.2 Source Test Data

Source-specific performance test data was referenced for some gaseous and HAP emission factors. This data was used to determine representative gaseous and HAP emission factors from the Kilns. The following source tests were used for calculation of kiln emissions:

- 1991 Source Test by Engineering Science
- April 2002 source testing
- 1996 Hydrochloric Acid Source Testing

- 2007 Source Testing by Delta Air Quality Services
- December 2010 NESHAP Compliance Testing (Kiln 4 Only)

10.1.2.3 Control Device Parameters

For particulate emissions routed to mechanical control devices, control parameters were used to determine total emissions. This was used to quantify emissions from dust collectors using the manufacturer's grain loading value (in gr/dscf) and designed dry standard airflow rate (dscfm) to find total emissions, as well as particle speciation factors where appropriate. The emission calculations in Appendix A contain a column with comments and/or footnotes referencing the source for the sources of particle speciation factors.

10.1.3 Control Efficiencies

Control efficiencies are based on AP-42, manufacturer's data, or source testing as indicated in Appendix A. Emissions from sources without control equipment, such as the haul roads and certain conveyor transfer points, are limited by good operating practices, such as watering, and inherent controls, such as building enclosures. Additional detail into claimed controls can be found in the emission calculations located in Appendix A.

10.2 Project Emission Sources

Material throughputs for material handling emission points such as conveyor transfers, crushing, and screening are calculated using the following equation and CalPortland-provided emission point throughput percent values, as identified in Appendix A.

$$\text{Annual Emission Point Throughput}\left(\frac{\text{tons}}{\text{year}}\right) = \text{Operation Material throughput}\left(\frac{\text{tons}}{\text{year}}\right) * \text{Allocated Throughput Percent (\%)}$$

Based on CalPortland process descriptions, the following operations are considered to have their own unique material throughput values:

- Twin Peaks Rock and Stone Aggregate Plant
- Cotton Field Primary and Overland Plant
- Manufactured Fines Plant
- Wash Plant
- CBP

10.2.1 Material Transfer and Drop Processes

The annual PTE from material transfer and drop processes is calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right) = \frac{\text{ton material}}{\text{year}} * \frac{1\text{ ton}}{2000\text{ lbs}} * \text{Emission Factor}\left(\frac{\text{lb}}{\text{ton material}}\right)$$

Emissions from material transfer and drop processes are calculated using maximum annual material process rates and the following emissions expression found in AP-42, Section 13.2.4 (11/06), for aggregate storage and handling.

$$EF = \frac{K(0.0032)\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

Where:

EF = Emission factor in lb per ton of material transferred
K = 0.74 for PM, 0.35 for PM_{10}, and 0.053 for $PM_{2.5}$
U = Mean annual wind speed, miles per hours (mph) (8.039 mph for all transfer points)
M = Moisture content as specified in Appendix A.

To account for the controls at certain emission points, a control efficiency is applied to the above emission factor using the following equation:

$$EF\ (Controlled) = EF*(1\text{-}Control\ Efficiency)$$

Where:

EF = Emission factor in lb per ton of material transferred as specified in

This equation is used to calculate emissions from the following kinds of transfer points:

- Conveyor belt to conveyor belt;
- Conveyor belt to splitter;
- Conveyor belt to blade mill;
- Conveyor belt to stockpile;
- Stockpile to under-pile conveyor belt;
- Stockpile loadout
- Hopper to conveyor belt;
- Grizzly to conveyor belt;
- Splitter to conveyor belt.

No emissions are expected from the transfer of completely saturated streams, such as material coming out of the blade mills, the fine material washers, the coarse material washer, and the classifying tank. The emissions from the transfer of aggregate from front-end loaders to hoppers are calculated with the annual emissions equation described above and emission factors taken from AP-42, Section 11.19.2, Table 11.19.2-2, Truck Unloading - Fragmented Stone (08/04). The PM and $PM_{2.5}$ truck unloading emission factors are conservatively assumed to be equal to those of PM_{10}. Please see Appendix A for detailed emission calculations and emission factor inputs.

10.2.2 Crushers

The annual PTE from crushers is calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right) = \frac{\text{ton material}}{\text{year}} \times \frac{1\text{ ton}}{2000\text{ lbs}} \times \text{Emission Factor}\left(\frac{\text{lb}}{\text{ton material}}\right)$$

Uncontrolled and controlled emission factors for tertiary and fines crushing were taken from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04) and are included in Appendix A. The tertiary crushing $PM_{2.5}$ emission factor

is conservatively assumed to be equal to that of PM_{10}. These emission factors are inclusive of emissions generated by the transfers into and out of the equipment, as well as the crushing process. Emissions from baghouse-controlled crushers accounted for at the baghouse outlet (see Section 10.2.4).

10.2.3 Screens

The annual PTE from screening operations (including dewatering screens) is calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right) = \frac{\text{ton material}}{\text{year}} \times \frac{1\text{ ton}}{2000\text{ lbs}} \times \text{Emission Factor}\left(\frac{\text{lb}}{\text{ton material}}\right)$$

Uncontrolled and controlled emission factors for screening processes are taken from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04) and are included in Appendix A. The screening $PM_{2.5}$ emission factor is conservatively assumed to be equal to that of PM_{10}. These emission factors are inclusive of emissions generated by the transfers into and out of the equipment, as well as the screening process. No emissions are expected from screening processes with saturated materials.

10.2.4 Baghouses and Dust Collectors

The annual PTE from the baghouse and dust collector units was calculated using the following equations and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right) = \text{Max Outlet Grain Loading}\left(\frac{\text{grain}}{\text{dscf}}\right) \times \text{Exhaust Flow Rate}\left(\frac{\text{dscf}}{\text{min}}\right) \times 60\left(\frac{\text{min}}{\text{hr}}\right) \times 8760\left(\frac{\text{hr}}{\text{year}}\right) \times \frac{1}{7000}\left(\frac{\text{lb}}{\text{grain}}\right) \times \frac{1}{2000}\left(\frac{\text{ton}}{\text{lb}}\right) \times \text{Particle Size Multiplier}$$

Dust collector max outlet grain loading, stack flow rate, and particle size multiplier values are presented in Appendix A.

10.2.5 Pile Wind Erosion

The annual PTE from stockpiles is calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right) = \text{Area (acres)} \times \frac{1\text{ ton}}{2000\text{ lbs}} \times \frac{365\text{ days}}{1\text{ year}} \times \text{Emission Factor}\left(\frac{\text{lb}}{\frac{\text{acre}}{\text{day}}}\right)$$

Emission factors due to wind erosion from stockpiles and overburden areas are determined using the following equation from EPA's Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, EPA-450/2-92-004 (September 1992).

$$EF\left(\frac{\text{lb}}{\frac{\text{acre}}{\text{day}}}\right) = 1.7\left(\frac{s}{1.5}\right)\left(\frac{365\text{-}p}{235}\right)\left(\frac{f}{15}\right)$$

Where:

s = Silt content of material (7.1% for aggregate and 2.6% for fines and manufactured sand piles, per AP-42 Section 13.2.1 Table 13.2.1-3 and AP-42 Section 13.2.4 Table 13.2.4-1, respectively).
p = Number of days per year with precipitation ≥ 0.01" (60 days per AP-42 Figure 13.2.1-2).
f = Percentage of time mean wind speed > 12 mph (0.53% to 0.54% depending on surface roughness per 2017 to 2021 ADEQ AERMET data file for Tucson, AZ).

10.2.6 Traffic Emissions from Travel on Paved Roads

The annual PTE from vehicle on paved roads is calculated using the following equation and the emission factor detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right) = \text{Maximum Annual VMTs from Paved Roads}\left(\frac{\text{VMTs}}{\text{year}}\right) \times \frac{1}{2000}\left(\frac{\text{ton}}{\text{lb}}\right) \text{Emission Factor}\left(\frac{\text{lb}}{\text{VMTs}}\right) \times (1\text{-Control Efficiency (\%)})$$

A 90% control efficiency for immediate removal of deposits on paved roads was applied for the paved road segment per WRAP Fugitive Dust Handbook (September 2006).

Emission factors for travel on each paved segment were calculated based on the following equation from AP-42, Section 13.2.1 (01/11):

$$E_{ext} = [k(sL)^{0.91}(W)^{1.02}]\left(1-\frac{P}{4N}\right)$$

Where:

E_{ext} = Emission factor (lb/VMT)
k = Constant (0.011 for PM, 0.0022 for PM_{10} and 0.00054 $PM_{2.5}$)
sL = Surface material silt content (7.1% for sand and gravel processing plant roads per AP-42 Table 13.3.1-3)
W = Mean vehicle weight (tons)
- 63.79 tons for Caterpillar 988 Front End Loaders
- 46.63 tons for Caterpillar 982 Front End Loaders
- 28.25 tons for Customer Trucks

p = Number of days with at least 0.1 in of precipitation per year (60 days per AP-42 Figure 13.2.1-2)
n = number of days in averaging period (365 days for annual)

See Appendix A for detailed vehicle weight and VMT calculations.

10.2.7 Traffic Emissions from Travel on Unpaved Roads

PTE from travel on unpaved roads is calculated using the following equation and the emission factor detailed below:

$$\text{Annual Emissions from Unpaved Roads}\left(\frac{\text{tons}}{\text{year}}\right) = \text{Maximum Annual VMTs from Unpaved Roads}\left(\frac{\text{VMTs}}{\text{year}}\right) \times \frac{1\text{ ton}}{2000\text{ lbs}} \times \text{Emission Factor}\left(\frac{\text{lb}}{\text{VMT}}\right) \times (1\text{-Control Efficiency (\%)})$$

In the case where multiple unpaved road traffic control efficiencies needed to be combined, the following equation was used:

Control Efficiency (%) = Control Efficiency 1+Control Efficiency 2*(1-Control Efficiency 1)

Where:

Control Efficiency 1 or 2 = Control efficiency in percent:

- 74% for watering of unpaved roads and use of chemical dust suppressants per the WRAP Fugitive Dust Handbook (September 2006). The roads will be watered sufficiently to achieve this control efficiency.
- 44% for limiting vehicle speeds on unpaved roads to 25 mph per the WRAP Fugitive Dust Handbook (September 2006).

Emission factors for travel on each unpaved segment were calculated based on the following equation from AP-42, Section 13.2.2 (11/06):

$$EF=k\left(\frac{s}{12}\right)^{a}\left(\frac{W}{3}\right)^{b}\left[\frac{365-p}{365}\right]$$

Where:

EF = Emission factor (lb/VMT)
k = Constant (4.9 for PM, 1.5 for PM_{10} and 0.15 $PM_{2.5}$)
a = Constant (0.7 for PM, 0.9 for PM_{10} and $PM_{2.5}$)
b = Constant (0.45 for PM, PM_{10}, and $PM_{2.5}$)
s = Surface material silt content (4.8% for sand and gravel processing roads per AP-42 Table 13.2.2-1)
W = Mean vehicle weight (tons)

- 63.79 tons for Caterpillar 988 Front End Loaders
- 46.63 tons for Caterpillar 982 Front End Loaders
- 28.25 tons for Customer Trucks

p = Number of days with at least 0.1 in of precipitation per year (60 days per AP-42 Figure 13.2.1-2)

See Appendix A for detailed vehicle weight and VMT calculations.

10.2.8 Concrete Batch Plant

The annual particulate pollutant PTE from loading of cement and cementitious additives into the CBP silos (BP-S-1 through BP-S-4) and horizontal guppy (BP-S-5), as well as from loading of the central mixer, was calculated based on the methodology described in Section 10.2.4. The annual particulate pollutant PTE from all other material transfers was calculated using the "drop point" equation in AP-42, Section 13.2.4 (11/06) (as described Section 10.2.1). HAP emissions from concrete batching are calculated using the emission factors provided in AP-42 Section 11.12, Table 11.12-8. Remaining CBP emission sources include stockpile wind erosion, and vehicle travel. Emissions from these sources was calculated consistent with the methodologies described in Sections 10.2.5, 10.2.6, and 10.2.7.

10.3 PSD Calculations

Under A.A.C. R-18-2-401, the Facility is considered an existing major facility. As such, emission calculations were performed to determine if the Project is considered a major modification as defined in A.A.C. R-18-2-101.74 (i.e., if the Project results in a significant emissions increase). Projected and baseline actual emissions (PAE and BAE) were calculated per A.A.C. R18-2-401 for existing Project sources that will be either physically modified or that incur a change in the method of operation as a result of a project. The PTE is used as the PAE for the new aggregate operations and the CBP. Refer to Section 12.2.1 for additional details on NSR applicability.

10.3.1 Baseline Actual Emissions

Baseline actual emissions (BAE) are required to be calculated per A.A.C. R18-2-401.2 for existing emission units that are either physically modified or that incur a change in the method of operation as a result of a project (i.e., Kiln 4, Primary Crushing, Twin Peaks, and Cotton Field relevant sources). BAE are calculated for the following pollutants: SO_2, NO_x, CO, volatile organic compound (VOC), PM, PM_{10}, and $PM_{2.5}$. BAE are calculated for all existing emission units at the Facility that are impacted by the Project (i.e., Kiln 4, Primary Crushing, Twin Peaks, and Cotton Field relevant sources). Pursuant to A.A.C. R18-2-401.2(b) (which references 40 CFR 52.21), BAE are calculated for each NSR pollutant emitted by the Project as the average rate, in tons per year, of the emissions that occurred during a consecutive 24-month period within the ten-year period immediately preceding the date a complete permit application is submitted to ADEQ. For purposes of this application, the baseline review period extends from January 2020 through December 2024. For Kiln 4, monthly CEMs data was used to determine NOx, CO, and VOC actual emissions and production during the baseline review period. Performance test data was used to determine Kiln 4 filterable PM, PM_{10}, $PM_{2.5}$, and SO_2 actual emissions during the baseline review period. For Twin Peaks and Cotton Field sources, 2020-2024 annual emission inventory data was used to determine filterable PM, PM_{10}, $PM_{2.5}$ emissions during the baseline review period. It should be noted that revisions to the initially submitted EI data were made to address the updates to historical representations of certain emission sources at the plant (described in Section 4.3.22). CalPortland intends to submit revised EIs for reporting years evaluated as part of the baseline emissions review to reflect these revisions.

Because the Manufactured Fines Plant, Wash Plant, and CBP consist entirely of new emission units, BAE for these emission units is set equal to zero.

10.3.2 Projected Actual Emissions

Projected actual emissions (PAE) are required to be calculated per A.A.C. R18-2-401.23 for new and existing emission units (i.e., Kiln 4, Primary Crushing, Twin Peaks, and Cotton Field) that are either physically modified or that incur a change in the method of operation as a result of a project. PAE are calculated for SO_2, NO_x, CO, VOC, PM, PM_{10}, and $PM_{2.5}$. The PTE is used for Project Projected Actual emissions (PAE) determination associated with the new aggregate operations. PAE for existing project sources were calculated based on the maximum emissions that could be emitted in any one of the five years following completion of the Project, excluding any increase in emissions that the existing emission units could have accommodated (CHA) during the baseline period selected for the BAE calculations. For purposes of this application, it is assumed that Kiln 4 will produce a maximum of 1,175,000 tons per year of clinker during the five years following the Project, and that the kiln could have accommodated additional clinker production during the baseline period if customer product demand existed (i.e., demand growth unrelated to the Project). It is assumed that the Twin Peaks and Cotton Field Project sources will achieve a maximum throughput of 1,100,000 tons per year of aggregate and fines during the five years following the project, and that these operations could have

accommodated additional clinker production during the baseline period if customer product demand existed (i.e., demand growth unrelated to the Project). The PAE and CHA emissions are included in Appendix A.

10.3.3 Project Emission Increase

The PEI for each pollutant is calculated as the sum of the difference between the PAE, CHA, and BAE (PAE minus (CHA minus BAE) minus BAE) for each existing emissions unit and the PTE for the new emissions units. The PEI for each NSR pollutant is then compared to the corresponding Significant Emission Rate (SER) as defined in A.A.C. R18-2-101.131 or in 40 CFR 52.21(b)(23)(i) to determine if the Project will result in a major modification to the Facility. **The Project will not result in a PEI greater than the SER for any NSR pollutant, and is therefore not considered a major modification.**

10.3.4 Consideration of Upstream and Downstream Impacts of the Project

The proposed changes in this application will not debottleneck facility operations. The introduction of alternative fuels to the kiln will not increase any potential emissions upstream or downstream of the kiln.

11. LIST OF INSIGNIFICANT ACTIVITIES

The insignificant and trivial activities listed in this section may occur at the Facility.

Table 11-1. Insignificant Activities and Sources

CalPortland Insignificant Activities and Sources	A.A.C. Citation
Petroleum product storage tanks containing the following substances: Diesel fuels and fuel oil in storage tanks with capacity ≤ 40,000 gallons or less, lubricating oil, transformer oil, and used oil.	R18-2-101.68.a.i
Gasoline storage tanks with capacity ≤ 10,000 gallons	R18-2-101.68.a.ii
Storage and handling of drums or other transportable containers where the containers are sealed during storage, and covered during loading and unloading, including containers of waste and used oil regulated under RCRA.	R18-2-101.68.a.v
Storage tanks of any size containing exclusively soaps, detergents, waxes, greases, aqueous salt solutions, aqueous solutions of acids that are not regulated air pollutants, or aqueous caustic solutions.[5]	R18-2-101.68.a.vi
Internal combustion engine-driven compressors, internal combustion engine-driven electrical generator sets, and internal combustion engine-driven water pumps used for less than 500 hours per calendar year for emergency replacement or standby service.	R18-2-101.68.b
Low Emitting Processes	R18-2-101.68.c
Housekeeping activities and associated products used for cleaning purposes, including collecting spilled and accumulated materials at the source, including operation of fixed vacuum cleaning systems.	R18-2-101.68.d.i
Noncommercial (in-house) experimental, analytical laboratory equipment, which is bench scale in nature, including quality control/quality assurance laboratories supporting a stationary source and research and development laboratories.	R18-2-101.68.e.i
Individual sampling points, analyzers, and process instrumentation, whose operation may result in emissions but that are not regulated as emission units.[6]	R18-2-101.68.e.ii
General office activities, such as paper shredding, copying, photographic activities, and blueprinting, but not to include incineration.[7]	R18-2-101.68.f.i

[5] These insignificant activities are indistinguishable from the trivial activity category in A.A.C R18-2-101.146.e.ii. CalPortland is requesting clarification from ADEQ on whether these activities should be treated as trivial or insignificant.

[6] These insignificant activities are indistinguishable from the trivial activity category in A.A.C. R18-2-101.146.f.vii. CalPortland is requesting clarification from ADEQ on whether these activities should be treated as trivial or insignificant.

[7] These insignificant activities are indistinguishable from the trivial activity category in A.A.C. R18-2-101.146.d.v. CalPortland is requesting clarification from ADEQ on whether these activities should be treated as trivial or insignificant.

CalPortland Insignificant Activities and Sources	A.A.C. Citation
Use of consumer products, including hazardous substances as that term is defined in the Federal Hazardous Substances Act where the product is used at a source in the same manner as normal consumer use.[8]	R18-2-101.68.f.ii
Installation and operation of potable, process and wastewater observation wells, including drilling, pumping, filtering apparatus.	R18-2-101.68.g.i
Transformer vents.	R18-2-101.68.g.ii

Table 11-2. Trivial Activities and Sources

CalPortland Trivial Activities and Sources	A.A.C. Citation
Combustion emissions from propulsion of mobile sources. • Company Vehicle travel on site	R18-2-101.146.a.i
Emergency or backup electrical generators at residential locations.	R18-2-101.146.a.ii
Portable electrical generators that can be moved by hand from one location to another. "Moved by hand" means capable of being moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.	R18-2-101.146.a.iii
Brazing, soldering, and welding equipment, and cutting torches related to manufacturing and construction activities that do not result in emission of HAP metals. Brazing, soldering, and welding equipment, and cutting torches related to manufacturing and construction activities that emit HAP metals are insignificant activities based on size or production level thresholds. Brazing, soldering, and welding equipment, and cutting torches directly related to plant maintenance and upkeep and repair or maintenance shop activities that emit HAP metals are treated as trivial and listed separately in this definition.	R18-2-101.146.b.iii
Air compressors and pneumatically operated equipment, including hand tools.	R18-2-101.146.b.v
Batteries and battery charging stations, except at battery manufacturing plants.	R18-2-101.146.b.vi
Process water filtration systems and demineralizers.	R18-2-101.146.b.xv
Oxygen scavenging or de-aeration of water.	R18-2-101.146.b.xvii
Ozone generators.	R18-2-101.146.b.xviii

[8] These insignificant activities are indistinguishable from the trivial activity category in A.A.C. R18-2-101.146.d.ix. CalPortland is requesting clarification from ADEQ on whether these activities should be treated as trivial or insignificant.

CalPortland Trivial Activities and Sources	A.A.C. Citation
Steam vents and safety relief valves.	R18-2-101.146.b.xix
Steam leaks.	R18-2-101.146.b.xx
Steam cleaning operations and steam sterilizers.	R18-2-101.146.b.xxi
Use of vacuum trucks and high-pressure washer/cleaning equipment within the stationary source boundaries for cleanup and insource transfer of liquids and slurried solids to wastewater treatment units or conveyances. • Process plant maintenance, including cleanout using vacuum and/or pressure washing	R18-2-101.146.b.xxii
Electric motors.	R18-2-101.146.b.xxiv
Plant and building maintenance and upkeep activities, including grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots, if these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and do not otherwise trigger a permit revision. Cleaning and painting activities qualify as trivial activities if they are not subject to VOC or hazardous air pollutant control requirements.	R18-2-101.146.c.i
Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating, de-greasing, or solvent metal cleaning activities, and not otherwise triggering a permit revision.	R18-2-101.146.c.ii
Janitorial services and consumer use of janitorial products.	R18-2-101.146.c.iii
Landscaping activities.	R18-2-101.146.c.iv
Routine calibration and maintenance of laboratory equipment or other analytical instruments.	R18-2-101.146.c.v
Caulking operations which are not part of a production process.	R18-2-101.146.c.viii
Air-conditioning units used for human comfort that do not have applicable requirements under Title VI of the Act.	R18-2-101.146.d.i
Ventilating units used for human comfort that do not exhaust air pollutants into the ambient air from any manufacturing, industrial or commercial process.	R18-2-101.146.d.ii
Tobacco smoking areas.	R18-2-101.146.d.iii
Non-commercial food preparation.	R18-2-101.146.d.iv

CalPortland Trivial Activities and Sources	A.A.C. Citation
General office activities, such as paper shredding, copying, photographic activities, pencil sharpening and blueprinting, but not including incineration.[9]	R18-2-101. 146.d.v
Bathroom and toilet vent emissions.	R18-2-101. 146.d.vii
Fugitive emissions related to movement of passenger vehicles, if the emissions are not counted for applicability purposes under subsection (146)(c) of the definition of major source in this Section and any required fugitive dust control plan or its equivalent is submitted with the application.	R18-2-101. 146.d.viii
Use of consumer products, including hazardous substances as that term is defined in the Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) where the product is used at a source in the same manner as normal consumer use.[10]	R18-2-101. 146.d.ix
Circuit breakers.	R18-2-101. 146.d.xi
Adhesive use which is not related to production.	R18-2-101. 146.d.xii
Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP.	R18-2-101. 146.e.i
Chemical storage associated with water and wastewater treatment where the water is treated for consumption and/or use within the permitted facility.	R18-2-101. 146.e.iii
Storage cabinets for flammable products.	R18-2-101. 146.e.v
Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.	R18-2-101. 146.e.vi
Vents from continuous emissions monitors and other analyzers.	R18-2-101. 146.f.i
Bench-scale laboratory equipment used for physical or chemical analysis, but not laboratory fume hoods or vents.	R18-2-101. 146.f.ii
Equipment used for quality control, quality assurance, or inspection purposes, including sampling equipment used to withdraw materials for analysis.	R18-2-101. 146.f.iii

[9] These trivial activities are indistinguishable from the insignificant activities category in A.A.C. R18-2-101.68.f.i. CalPortland is requesting clarification from ADEQ on whether these activities should be treated as trivial or insignificant.

[10] These trivial activities are indistinguishable from the insignificant activities category in A.A.C. R18-2-101.68.f.ii. CalPortland is requesting clarification from ADEQ on whether these activities should be treated as trivial or insignificant.

CalPortland Trivial Activities and Sources	A.A.C. Citation
Individual sampling points, analyzers, and process instrumentation, whose operation may result in emissions but that are not regulated as emission units.[11]	R18-2-101.146.f.vii
Fire suppression systems.	R18-2-101.146.g.i
Shock chambers.	R18-2-101.146.h.i
Cathodic protection systems.	R18-2-101.146.h.iv
Filter draining.	R18-2-101.146.h.vi

[11] These trivial activities are indistinguishable from the insignificant activities category in A.A.C. R18-2-101.68.e.ii. CalPortland is requesting clarification from ADEQ on whether these activities should be treated as trivial or insignificant.

12. FEDERAL AND LOCAL APPLICABLE REQUIREMENTS

12.1 Existing Applicable Regulations to The Facility

The following table outlines the federal and local regulations applicable to the Facility and contained in Permit No. 85424(113625).

Table 12-1. CalPortland Rillito Existing Applicable Requirements

Regulation	Description	Applicable Emission Sources	Proposed Changes to Permit Conditions? (Y/N)	Comments
Regional Haze Requirements				
40 CFR §52.145	Visibility Protection	► Kiln 4	N	N/A
40 CFR Part 60 – Standards of Performance for New Stationary Sources				
Subpart A	General Provisions	As specified for "affected facilities" under each applicable Subpart.	N	N/A
Subpart F	Standards of Performance for Portland Cement Plants	Kiln 4, as well as the following Kiln 4 equipment constructed or modified after August 17, 1971. See the equipment list for further details: ► Each raw mill system ► Each clinker cooler ► Each finish mill system (CM, D2, D3) ► Kiln feed silos ► Raw material storage ► Proportioning silos ► Clinker storage ► Finished Product Storage ► Conveyor transfer points ► Bagging and bulk loading and unloading systems	N	N/A
Subpart Y	Standards of Performance for Coal Preparation and Processing Plants	Coal processing and conveying equipment and coal storage systems, transfer and loading systems constructed, modified, or reconstructed after October 27, 1974. • Includes conveyors, elevators, feeders, bins, dust collectors, and cyclones associated with the coal handling system in the Preheater and Kiln 4 process area as well as the portable breaker and crusher	N	
Subpart OOO	Standards of Performance for Nonmetallic Mineral Processing Plants	Equipment in the following areas constructed after August 31, 1983. See equipment list for further detail into applicable units: ► Quarry Crushing System ► Overland Conveyor System ► Stacker/Reclaimer and Storage Area ► Roller Mill Feed Area ► Raw Feed Material to Rock Storage ► Twin Peak Rock and Stone Aggregate Plant ► Cotton Field Primary and Overland ► Portable Grizzly Screen when Processing Limestone/Gypsum	N	N/A
Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	► AGG-Gen	N	N/A
40 CFR Part 61 – National Emissions Standards for Hazardous Air Pollutants				
Subpart A	General Provisions	As specified for each applicable Subpart.	N	N/A

Regulation	Description	Applicable Emission Sources	Proposed Changes to Permit Conditions? (Y/N)	Comments
Subpart M	National Emission Standard for Asbestos	Contingent: Facility-wide demolition and removal operations	N	N/A
40 CFR Part 63 – National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories				
NESHAPs have been established in 40 CFR Part 63 to control emissions of HAPs from stationary sources. A facility that is a major source of HAPs is defined as having PTE emissions greater than 25 tpy of total HAPs and/or 10 tpy of a single HAP. Facilities with a potential to emit HAPs at an amount less than these major source (i.e., Title V) thresholds are otherwise considered an "area source". The Facility is classified as a major source of HAPs as it has potential HAP emissions greater than the major source thresholds for the largest single HAP (HCl) and total HAP threshold. The NESHAP allowable emission limits are most often established on the basis of a maximum achievable control technology (MACT) determination for the particular source. The NESHAP apply to sources in specifically regulated industrial source categories (Clean Air Act [CAA] §112(d)) or on a case-by-case basis (CAA §112(g)) for facilities not regulated as a specific industrial source type.				
Subpart A	General Provision	As specified for "affected sources" under each applicable Subpart.	N	N/A
Subpart LLL	National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry	Process equipment in the following areas. Additional detail into each applicable emission unit can be found in the equipment list. ► Each kiln (Kiln 1-4) ► Each clinker cooler ► Each raw mill ► Each finish mill ► Each raw material dryer ► Each raw material, clinker, or finished product storage bin ► Each conveying system transfer point associated with coal preparation used to convey coal from the mill to the kiln ► Each bagging and bulk loading and unloading system ► Each open clinker storage pile	Y	CalPortland proposes to update the language in Condition VI.C.4.c, which establishes the requirement for dioxin/furan performance testing at the Facility. The underlying authority for the condition is 40 CFR 63.1349(c) states, "*performance tests required every 30 months must be completed no more than 31 calendar months* after the previous performance test…". However, permit condition VI.C.4.c currently requires testing to occur between 29 and 31 calendar months after the previous performance test. Because the underlying authority only requires testing "at a minimum" 30 months from the prior D/F test but no later than 31 months, CalPortland proposes to update the condition language to allow testing between 24 and 31 calendar months after the previous performance test (see Appendix B).
Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	► AGG-Gen ► T1-MG1 ► H3-K-MG ► H3-K4-AUX	N	N/A
Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters	► Bunker C Boiler (6.275 MMBtu/hr) ► D4-RM1-HTR (75 MMBtu/hr)	Y	Per 40 CFR 63 § 63.7485, NESHAP Subpart DDDDD (5D), most recently amended in October 2022 following the last permit renewal, applies to an "industrial, commercial, or institutional boiler or process heater at a HAP major source". Per §63.7491(d), exemptions to the rule include hot water heaters, defined in § 63.7575 to be "*a closed vessel with a capacity of no more than 120 U.S. gallons in which water is heated by combustion of gaseous, liquid, or biomass/bio-based solid fuel and is withdrawn for use external to the vessel. Hot water boilers (i.e., not generating steam) combusting gaseous, liquid, or biomass fuel with a heat input capacity of less than 1.6 million Btu per hour are included in this definition...*" The following hot water heaters at the facility are exempt: ► Water Heater – 0.075 MMBtu/hr ► Water Heater – 0.046 MMBtu/hr ► Water Heater – 0.04 MMBtu/hr The following natural gas-fired units are also not covered by NESHAP Subpart 5 D because they do not mee the definition of "boiler" or "process heater" in the rule. Process heaters under the rule do not include direct-fired units. Additionally,

Regulation	Description	Applicable Emission Sources	Proposed Changes to Permit Conditions? (Y/N)	Comments
				process heaters under the rule do not include units used for comfort heat or space heat, food preparation for on-site consumption, or autoclaves. ► Direct-Fired Heaters (2) – 2 MMBtu/hr ► Radiant Heaters (7) – 0.03 MMBtu/hr ► Office Furnace – 0.18 MMBtu/hr ► Office Furnaces (2) – 0.08 MMBtu/hr ► Office Furnace – 0.05 MMBtu/hr ► Furnaces (3) – 0.04 MMBtu/hr ► Furnaces (3) – 0.025 MMBtu/hr ► Unit Heater – 0.3 MMBtu/hr ► Unit Heater (3) – 0.25 MMBtu/hr ► Carpenter Shop Unit Heater – 0.1 MMBtu/hr ► Separator Heaters (4) – 2 MMBtu/hr ► Direct-Fired Heaters (2) – 2 MMBtu/hr ► Elevator Heaters (4) – 0.5 MMBtu/hr The covered sources at the Facility (Bunker C Boiler D4-RM1-HTR heater) are covered by the Gas 1 fuel category in §63.7499. To align with the 2022 Rule amendments, CalPortland proposes the following changes (see Appendix B). ► Update the language in permit Condition VI.D.2(b)(2) to require biennial tuning for affected facilities with a heat input capacity greater than 5 MMBtu/hr but less than 10 MMBtu/hr, consistent with §63.7500(e), instead of requiring 5-year tuning (applicable to affected facilities ≤ 5 MMBtu/hr). This is because the Bunker C Boiler has a 6.275 MMBtu/hr capacity (i.e., in the >5 MMBtu/hr but <10 MMBtu/hr category). ► Update the language in Condition VI.D.2(c)(1)(f) to align with the language in the underlying rule.
40 C.F.R. Part 68	Chemical Accident Prevention Provisions	Contingent: Facility-wide to any process with more than a threshold quantity of a regulated substance in a process.	N	N/A
40 C.F.R. Part 82	Protection of Stratospheric Ozone	Facility-wide to refrigerant-containing appliances and MVACs	N	N/A
State Applicable Requirements (include parallel State Implementation Plan provisions)				
Article 3- Permits and Permit Revisions				
A.A.C. R18-2-304	Permit Application Processing Procedures	Facility-wide	N	N/A
A.A.C. R18-2-306	Permit Contents	As specified in the permit.	N	
A.A.C. R18-2-306.01	Permits Containing Voluntarily Accepted Emission Limitations and Standards	As specified in the permit.	Y	See Section 7.
A.A.C. R18-2-309	Compliance Plan; Certification	Facility-wide	N	

Regulation	Description	Applicable Emission Sources	Proposed Changes to Permit Conditions? (Y/N)	Comments
A.A.C. R18-2-310	Affirmative Defenses for Excess Emissions Due to Malfunctions, Startup, and Shutdown	Facility-wide	N	
A.A.C. R18-2-311	Test Methods and Procedures	As specified in the permit.	N	N/A
A.A.C. R18-2-312	Performance Tests	As specified in the permit.	N	N/A
A.A.C. R18-2-315	Posting of Permit	Facility-wide	N	N/A
A.A.C. R18-2-317	Facility Changes Allowed Without Permit Revisions - Class I	As specified in the permit.	N	N/A
A.A.C. R18-2-318	Administrative Permit Amendments	As specified in the permit.	N	N/A
A.A.C. R18-2-319	Minor Permit Revisions	As specified in the permit.	N	N/A
A.A.C. R18-2-320	Significant Permit Revisions	As specified in the permit.	N	N/A
A.A.C. R18-2-321	Permit Reopenings; Revocation and Reissuance; Termination	Facility-wide	N	N/A
A.A.C. R18-2-325	Permit Shields	As specified in the permit.	N	N/A
A.A.C. R18-2-327	Emissions Inventory Questionnaire and Emissions Statement	Facility-wide	N	N/A
A.A.C. R18-2-331	Material Permit Condition	Facility-wide	N	N/A
Article 6 – Emissions from Existing and New Nonpoint Sources				
A.A.C. R18-2-602	Unlawful Open Burning	Contingent: Facility-wide.	N	N/A
A.A.C. R18-2-604	Open Areas, Dry Washes, or Riverbeds	Facility-wide non-point sources, including buildings and appurtenances; buildings or subdivision sites; driveways or parking areas; vacant lots; or open areas.	N	N/A
A.A.C. R18-2-605	Roadways and Streets	Facility-wide non-point sources, including roadways or alleys.	N	N/A
A.A.C. R18-2-606	Material Handling	Facility-wide non-point sources, including crushing, screening, handling, transporting, or conveying of materials.	N	N/A
A.A.C. R18-2-607	Storage Piles	Facility-wide non-point sources, including stacking, piling, or storing of dust-producing material; and stacking and reclaiming machinery utilized at storage piles.	N	N/A
A.A.C. R18-2-614	Evaluation of Non-Point Source Emissions	Facility-wide non-point sources	N	N/A
Article 7 – Existing Stationary Source Performance Standards				
A.A.C. R18-2-702.B	General Provisions (Opacity)	Facility-wide to point sources.	N	N/A
A.A.C. R18-2-705	Standards of Performance for Existing Portland Cement Plants	► Kilns 1, 2, 3, and 4 ► Clinker Coolers As well as process equipment constructed on or before August 17, 1971 in the following areas. See the equipment list for further details: ► Each raw mill ► Each finish mill	Y	NSPS Subpart F applies to Kiln 4 and Clinker Cooler 4 because they were constructed after August 17, 1971. Per A.A.C. R18-2-702.A, the provisions of Article 7 may only apply to a source that meets all the criteria listed in paragraphs 1 to 3 of the rule. The A.A.C. R18-2-702.A(1) criterion is being an existing source as defined in R18-2-101. Per A.A.C. R18-2-701.16, "existing source" means any source which does not have

Regulation	Description	Applicable Emission Sources	Proposed Changes to Permit Conditions? (Y/N)	Comments
		► Kiln feed silos ► Proportioning silos ► Clinker storage ► Finished Product Storage ► Conveyor transfer points ► Bagging and bulk loading and unloading systems		an applicable new source performance standard under Article 9 of this Chapter. NSPS Subpart F is referenced as R18-2-901.10 in Article 9. CalPortland therefore proposes to update Attachment C Conditions VI. B.1(a)(2) and (3) to reflect that the condition does not apply to Kiln 4 because it is an NSPS Subpart F affected facility. Similarly, CalPortland proposes to update Attachment C Conditions VI. B.1(b)(2) and (3) to reflect that these condition does not apply to Clinker Cooler 4 because it is an NSPS Subpart F affected facility.
A.A.C. R18-2-710	Standards of Performance for Existing Storage Vessels for Petroleum Liquids	► Gasoline Storage Tank	N	N/A
A.A.C. R18-2-716	Standards of Performance for Existing Coal Preparation Plants	Coal processing and conveying equipment and coal storage systems, transfer and loading systems constructed before October 27, 1974. See the equipment list for additional details. ► Includes conveyors, elevators, feeders, bins, dust collectors, and cyclones	N	N/A
A.A.C. R18-2-719	Standards of Performance for Existing Stationary Rotating Machinery	► T1-MG1 ► H3-K-MG ► H3-K4-AUX ► H4-MG1	N	N/A
A.A.C. R18-2-722	Standards of Performance for Existing Gravel or Crushed Stone Processing Plants	► Equipment at the Twin Peaks Rock Crushing and Screening Plant constructed prior to August 31, 1984. See the equipment list for additional details into applicable sources	N	N/A
A.A.C. R18-2-724	Standards of Performance for Fossil-fuel Fired Industrial and Commercial Equipment	► Bunker C Boiler ► D4-RM1-HTR ► Central Control Heating Boiler ► Separator Heaters ► Direct-Fired Heater ► Elevator Heaters ► Water Heaters ► Unit Heaters ► Carpenter Shop Heater ► Radiant Heater ► Office Furnaces ► Furnaces	N	N/A
A.A.C. R18-2-726	Standards of Performance for Sandblasting Operations	► Sandblasting or other abrasive blasting operations	N	N/A
A.A.C. R18-2-727	Standards of Performance for Spray Painting Operations	► Spray painting operations	N	N/A
A.A.C. R18-2-730	Standards of Performance for Unclassified Sources	► Diesel/Used Oil tanks ► Facility-wide (Odor requirements in A.A.C. R18-2-730.D)	N	N/A
Article 9 – New Source Performance Standards				
A.A.C. R18-2-901	NSPS Subpart A, Subpart F, Subpart Y, Subpart OOO, and Subpart IIII	See above for description of applicable equipment		

Regulation	Description	Applicable Emission Sources	Proposed Changes to Permit Conditions? (Y/N)	Comments
Article 11 – Federal Hazardous Air Pollutants				
A.A.C. R18-2-1101	40 CFR 61, Subpart A and Subpart M	See above for description of applicable equipment		
A.A.C. R18-2-1102	40 CFR 63, Subpart A, Subpart LLL, Subpart ZZZZ, and Subpart DDDDD	See above for description of applicable equipment		
Pima County Applicable Requirements				
PCC 17.16.430	Standards of Performance for Unclassified Sources	► Lime Bin ► Lime Bin Vent	N	N/A

12.2 Applicable Regulations to the Project

12.2.1 Federal Major New Source Review (NSR) Applicability

Pursuant to A.A.C. R18-2-402.C, major NSR applies to any "major modification" of an existing major stationary source. As defined at A.A.C. R18-2-101.74, a "major modification" is "any physical change or change in the method of operation of a major source that would result in both a significant emissions increase of any regulated NSR pollutant and a significant net emissions increase of that pollutant from the stationary source." The proposed Project changes will result in a physical change as well as change in method of operation of the Facility. However, the Project does not result in a significant emissions increase (defined at A.A.C. R18-2-101.131), as shown in Table 2a of Appendix A, because the PEI does not exceed the SER for the NSR pollutants emitted by the Project. **As such the Project does not constitute a major modification and is not subject to major NSR review.**

There is a "reasonable possibility" pursuant to A.A.C. R18-2-402.F(6)(b) that the Project, which is not a major modification, may result in a significant emissions increase of filterable PM and PM_{10}. CalPortland will therefore comply with the recordkeeping requirements contained in A.A.C. R18-2-402.F(1) and F(7) for the Project. The PEI for all other NSR pollutants does not exceed 50% of the respective SERs when the PEI is added to the amount of emissions excluded under R18-2-401(23)(b)(iv)**.**

12.2.2 Minor New Source Review (mNSR) Applicability

Per A.A.C. R18-2-334.A, minor New Source Review (mNSR) requirements shall apply when the project involves:

- Construction of any new Class I or Class II source, including the construction of any source requiring a Class II permit under §R18-2-302.01(C)(4); or
- any minor NSR modification to a Class I or Class II source.

A.A.C. R18-2-301.15 defines "minor NSR modification" as any of the following changes that do not qualify as a major source or major modification:

a. *Any physical change in or change in the method of operation of an emission unit or a stationary source that either:*
    i. *Increases the potential to emit of a regulated minor NSR pollutant by an amount greater than or equal to the permitting exemption thresholds, or*
    ii. *Results in emissions of a regulated minor NSR pollutant not previously emitted by such emission unit or stationary source in an amount greater than or equal to the permitting exemption thresholds*.

b. Construction of one or more new emissions units that have the potential to emit regulated minor NSR pollutants at an amount greater than or equal to the permitting exemption thresholds.

Additionally, A.A.C. R18-2-301.15.c states:

> *A change covered by subsections [(15)](a) or (b) constitutes a minor NSR modification regardless of whether there will be a net decrease in total source emissions or a net increase in total source emissions that is less than the permitting exemption threshold as a result of decreases in the potential to emit of other emission units at the same stationary source.*

CalPortland evaluated minor NSR applicability for the Application using the emissions evaluation methodology requested by ADEQ on October 2, 2026. The change in PTE for each emission unit under the Application was calculated by comparing the pre-application PTE and post-application PTE. The sum of PTE increases for Application emission units was then compared against the permitting exemption thresholds in R18-2-101.101 to determine minor NSR applicability for each regulated minor NSR pollutant. Any emission units which resulted in a PTE decrease were excluded from this evaluation.

The Application PTE increases do not trigger the permitting exemption threshold for any regulated minor NSR pollutant. **Therefore, the Application is not a minor NSR modification and is not subject to the minor NSR requirements under A.A.C. R18-2-334**.

12.2.3 New Source Performance Standards (NSPS)

12.2.3.1 NSPS Subpart A

All affected facilities subject to an NSPS are also subject to the applicable General Provisions of NSPS Subpart A unless specifically excluded by a specific NSPS Subpart. For example, NSPS Subpart A addresses the following for affected facilities subject to a specific NSPS Subpart:

- Initial construction/reconstruction notification;
- Initial startup notification;
- Performance tests;
- Performance test date initial notification;
- General monitoring requirements;
- General recordkeeping requirements; and
- Semi-annual monitoring system and/or excess emission reports.

12.2.3.2 NSPS Subpart F – Standards of Performance for Portland Cement Plants

NSPS Subpart F, *Standards of Performance for Portland Cement Plants*, applies to affected facilities in portland cement plants that commenced construction or modification after August 17, 1971. Pursuant to 40 CFR 60.60(a), the affected facilities include each **kiln**, clinker cooler, raw mill system, finish mill systems, raw mill dryer, raw material storage, clinker storage, finished product storage, **conveyor transfer points**, bagging, and bulk loading systems. A modification is defined in 40 CFR 60.2 as any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

The addition of Kiln 4 alternative fuels associated with the Project could be considered a change in the method of operation of the kiln, but the kiln will not be considered a modified source under NSPS F since emission increases are not anticipated on an actual short-term basis as a result of the Project. However Kiln 4 is already an affected facility under NSPS Subpart F because it was constructed after August 17, 1971.

The proposed additional conveyor transfer points associated with the D2 Bypass will be subject to NSPS Subpart F, which includes a 10% opacity limit. The NSPS emission standards for these affected facilities are provided in 40 CFR 60.62(c) and prohibit "discharge into the atmosphere from any affected facility other than the kiln and clinker cooler any gases which exhibit 10 percent opacity or greater." CalPortland will comply with all applicable recordkeeping, reporting, and notification requirements of NSPS F.

The proposed CBP does not include any equipment that will manufacture portland cement and will use cement already produced at the Facility. As such, NSPS Subpart F does not apply to the proposed CBP.

12.2.3.3 NSPS Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants

Per 40 CFR §60.670(a)(1), *Standards of Performance for Nonmetallic Mineral Processing Plants* applies to each **crusher**, grinding mill, **screening operation**, bucket elevator, **belt conveyor**, bagging operation, storage bin, or enclosed truck or railcar loading station at a nonmetallic mineral processing plant that was constructed, modified, or reconstructed after August 31, 1983. Per 40 CFR 60.671, a nonmetallic mineral processing plant is defined as follows:

> ***Nonmetallic mineral processing plant*** *means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants,* ***portland cement plants****, or any other facility processing nonmetallic minerals …*
>
> ***Nonmetallic mineral*** *means any of the following minerals or any mixture of which the majority is any of the following minerals: (1)* ***Crushed and Broken Stone****, including* ***Limestone,*** *Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell. …*

Existing operations at the Twin Peaks Rock and Stone plant are subject to NSPS Subpart OOO. The proposed additions of the Manufactured Fines Plant and Wash Plant will be considered nonmetallic mineral processing plants and will be constructed after August 31, 1983. The types of equipment identified in §60.670(a)(1) and proposed as part of the Project, will be subject to the provisions of NSPS Subpart OOO for sources that commence construction, modification, or reconstruction on or after April 22, 2008. This includes new crushers, screens, and belt conveyors.

The emission limits associated with NSPS Subpart OOO are listed in Tables 2 and 3 of the Subpart. All affected Project facilities, except crushers, at which a capture system is not used (i.e., "fugitive emissions") are required to meet an opacity limit of 7%. For Project affected facilities controlled by wet suppression, monthly periodic inspections of water sprays will be required according to § 60.674(b) and § 60.676(b).

For Project crushers at which a capture system is not used, an emissions limit of 12% opacity applies. These requirements apply to Crusher CR-2 and Crusher CR-3. For Project crushers with capture systems, a 0.014 gr/dscf PM limit applies. Compliance with the limit must be demonstrated with an initial performance test according to § 60.8 and § 60.675, as well as monitoring of baghouses according to § 60.674(c), (d), or (e) and § 60.676(b). These requirements apply to Crusher CR-1 (controlled by TP-DC1) and Crusher CR-4 (ID TBD).

The proposed CBP will not include nonmetallic mineral crushing or grinding equipment. Aggregate and sand feed for the CBP will be transferred by front-end loader from the Wash Plant product stockpiles to the CBP hoppers; therefore, the CBP equipment is not connected by a conveying system to any crusher or grinding mill and is not part of a production line at a nonmetallic mineral processing plant as defined in 40 CFR 60.671. As such, NSPS Subpart OOO does not apply to the proposed CBP.

12.2.3.4 NSPS Subpart CCCC – Standards of Performance for Commercial and Industrial Solid Waste Incineration Units

NSPS Subpart CCCC, *Standards of Performance for Commercial and Industrial Solid Waste Incineration Units (CISWI),* applies to an incineration unit that meets the following three criteria: (1) the incineration unit is a new construction as defined in 40 CFR 60.2015; (2) the incineration unit is a CISWI as defined in 40 CFR 60.2265, or an Air Curtain Incinerator (ACI) as defined in 40 CFR 60.2265; and (3) the incineration unit is not exempt under §60.2020.

40 CFR 60.2015 states that an incineration unit is considered new if it meets any of the following criteria:

- It is a CISWI or ACI that commenced construction after June 4, 2010,
- It is a CISWI or ACI that commenced reconstruction or modification after August 7, 2013, or
- It is an incinerator or ACI that commenced construction after November 30, 1999, but no later than June 4, 2010, or that commenced reconstruction or modification on or after June 1, 2001, but no later than August 7, 2013.

Kiln 4 does not meet the definition of a CISWI or ACI unit pursuant to §60.2265, as the kiln is not an air curtain combustion unit, and it does not combust any solid waste as the term is defined in 40 CFR Part 241. Therefore, NSPS Subpart CCCC does not apply to the kiln as a result of this Project.

12.2.4 National Emission Standards for Hazardous Air Pollutants (NESHAP)

12.2.4.1 NESHAP Subpart A – General Provisions

All "affected sources" subject to a NESHAP Subpart are also subject to the applicable General Provisions of NESHAP Subpart A unless specifically excluded by a specific NESHAP Subpart. 40 CFR 63, Subpart A includes the following requirements for affected sources subject to a specific NESHAP Subpart:

- Initial construction/reconstruction notification;
- Initial startup notification;
- Performance tests;
- Performance test date initial notification;
- General monitoring requirements;
- General recordkeeping requirements; and
- Semi-annual monitoring system and/or excess emission reports.

12.2.4.2 NESHAP Subpart LLL – National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry

NESHAP Subpart LLL *National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry* applies to each new and existing portland cement plant that is a major source as defined in 40 CFR 63.2. Pursuant to 40 CFR 63.1340 the following affected sources are subject to NESHAP Subpart LLL: ***kilns***; clinker coolers; raw mills; finish mills; raw material dryers; raw material, clinker, or finished product storage bins; ***conveying system transfer points***; bagging and bulk loading and unloading systems; and open clinker storage piles.

The Project is not anticipated to change NESHAP LLL applicability to the kiln. However, the new conveying system transfer points associated with the new D2 Bypass system will be subject to NESHAP Subpart LLL and will be subject to the 10% opacity limit for affect sources other than kilns, clinker coolers, and raw material

dryers pursuant to 40 CFR 63.1345. CalPortland will comply with the 10% opacity limit for the new D2 bypass clinker handling belt conveyor material transfer points which will be fully enclosed and controlled by dust collectors H2-DC2, and H2-DC5.

The proposed CBP does not have any equipment that will manufacture portland cement and will use cement already produced at the Facility. As such, NESHAP Subpart LLL does not apply to the proposed CBP.

12.2.5 Non-Hazardous Secondary Materials

CalPortland proposes to combust NHSMs in either the existing Kiln 4 burner or calciner as fuels, including, but not limited to the examples in Table 12-2. The NHSMs to be used in Kiln 4 at the Facility can be characterized as non-hazardous secondary materials (NHSMs) following the provisions of 40 CFR 241 Subpart B, *Identification of Non-Hazardous Secondary Materials that are Solid Wastes When Used as Fuels or Ingredients in Combustion Units* (NHSM Rule). The NHSM Rule provides procedures to use in order to determine if a NHSM is considered a fuel or a solid waste.

Table 12-2. Examples of Proposed NHSM Fuels

Proposed Alternate Fuels
Engineered fuels
Biomass fuels
Construction and Demolition Wood
Wood/cardboard/paper
Biosolids
Dust collector bags generated on-site

Under the NHSM Rule, there are three "categories" that fuels for combustion units fall under in order to be considered a NHSM instead of a solid waste when combusted.

- **Non-waste "Blanket" Determinations for NHSM** [40 CFR 241.4(a)(1) – (10)]. There are several fuels that are categorically considered to be NHSM. No additional analysis is needed to show that fuels in this category meet NHSM criteria, provided that the fuels meet the applicable requirements in 40 CFR 241.4(a)(1) – (10).

- **NHSM that Remains in Control of the Generator and meets Legitimacy Criteria** [40 CFR 241.3(b)(1)]: Alternative materials used as fuel that remain in control of the generator (i.e., CalPortland) and meet the legitimacy criteria, which is subsequently described, are considered NHSM and not solid waste under this rule.

- **Processed NHSM that meets Legitimacy Criteria** [40 CFR 241.3(b)(4)]: Alternative materials produced from the processing of discarded NHSM and meet the legitimacy criteria, which is subsequently described, are considered NHSM and not solid waste under this rule. Processing is defined in 40 CFR 241.2.

Per 40 CFR 241.3(d), the legitimacy criteria is met if:

- The NHSM is managed as a valuable commodity,
- The NHSM has a meaningful heating value and used as a fuel in a combustion unit that recovers energy, and

- The NHSM contains contaminants or groups of contaminants at levels comparable in concentration to or lower than the traditional fuel(s) that the combustion unit is designed to burn.

CalPortland will only combust materials in Kiln 4 that are considered traditional fuels or NHSM. The examples of NHSM alternate fuels proposed for this Project are summarized by their respective NHSM criteria in Table 12-3 below. CalPortland will keep records demonstrating that all NHSMs used as fuel meet the criteria specified in the NHSM Rule.

Table 12-3. Examples of NHSM Alternate Fuels and NHSM Criteria Met

Proposed Alternate Fuels	NHSM Applicability Category
Engineered fuels	NHSM that Remains in Control of the Generator and meets Legitimacy Criteria - 40 CFR 241.3(b)(1) OR Processed NHSM that meets Legitimacy Criteria - 40 CFR 241.3(b)(4)
Biomass fuels	Non-waste "Blanket" Determinations for NHSM - 40 CFR 241.4(a)(2), (5), (9) or (10) OR NHSM that Remains in Control of the Generator and meets Legitimacy Criteria - 40 CFR 241.3(b)(1) OR Processed NHSM that meets Legitimacy Criteria - 40 CFR 241.3(b)(4)
Construction and demolition wood	NHSM that Remains in Control of the Generator and meets Legitimacy Criteria - 40 CFR 241.3(b)(1) OR Processed NHSM that meets Legitimacy Criteria - 40 CFR 241.3(b)(4)
Wood/cardboard/paper	NHSM that Remains in Control of the Generator and meets Legitimacy Criteria - 40 CFR 241.3(b)(1) OR Processed NHSM that meets Legitimacy Criteria - 40 CFR 241.3(b)(4)
Biosolids	Processed NHSM that meets Legitimacy Criteria - 40 CFR 241.3(b)(4)
Dust Collector bags	NHSM that Remains in Control of the Generator and meets Legitimacy Criteria - 40 CFR 241.3(b)(1)

12.2.6 Local Regulations

The potentially applicable Arizona specific regulations to the proposed additions associated with the Project are outlined in Table 12-4 below.

Table 12-4. Potentially Applicable Arizona Administrative Code Requirements

Potentially Applicable Rule Name	Potentially Applicable Rule	Affected Emission Source	Comment
Open Areas, Dry Washes, or Riverbeds	R18-2-604	Fugitive Emission Sources	CalPortland will comply with applicable provisions to prevent excessive amounts of particulate matter from becoming airborne.
Roadways and Streets	R18-2-605	Paved and Unpaved Roads	CalPortland will ensure that fugitive dust emissions from road-related construction activities are minimized with an appropriate control method.
			CalPortland will minimize fugitive dust emitted from transportation of materials on Facility paved and unpaved roads with an appropriate control method.

Potentially Applicable Rule Name	Potentially Applicable Rule	Affected Emission Source	Comment
Material Handling	R18-2-606	Truck Unloading and Feed into the Hoppers	CalPortland will utilize reasonable precautions to minimize fugitive dust emissions from material handling activities. These may include screening, handling, and transporting or conveying of materials.
Storage Piles	R18-2-607	All proposed Twin Peaks Rock and Aggregate Piles	CalPortland will utilize reasonable precautions to minimize fugitive dust emissions from the stockpiling of material on-site.
Evaluation of Nonpoint	R18-2-614	Facility-wide fugitive dust sources	Opacity of an emission from any nonpoint source will not exceed 40%, measured according to the 40 CFR 60, Appendix A, Reference Method 9. CalPortland will comply with opacity limitations.
General Visible Emissions Standard	R18-2-702	Dust collectors and baghouses	CalPortland will comply with the 20% opacity requirement for all existing and new point sources. CalPortland will conduct an initial visual assessment, and if any visible emissions are detected, will follow up with an EPA Method 9 evaluation.
Standards of Performance for Existing Gravel or Crushed Stone Processing Plants	R18-2-722	► Stackers ► Storage Piles ► Grizzlies	This rule applies to the following equipment which is not an NSPS-affected facility: primary rock crushers, secondary rock crushers, tertiary rock crushers, screens, conveyors and conveyor transfer points, stackers, reclaimers, and all gravel or crushed stone processing plants and rock storage piles. Project crushers, sizing screens, and belt conveyors and associated transfer points, are NSPS OOO affected facilities and are therefore not subject to A.A.C. R18-2-702. Grizzlies are not NSPS Subpart OOO affected facilities pursuant to 40 CFR 60.671. Project stackers, grizzlies, and piles will be subject to A.A.C. R18-2-702 and will comply with applicable provisions.
Standards of Performance for Unclassified Source	R18-2-730	► AGG-LS1 Silo and associated Bin Vent AGG-LS1-DC ► Blade Mills ► Fine Material Washers ► Dewatering Screens	CalPortland will comply with the applicable provisions for the Project affected facilities.
Standards of Performance for Existing Concrete Batch Plants	R18-2-723	Concrete Batch Plant	Per A.A.C. R18-2-702.A, the provisions of Article 7 apply only to a source that meets all the criteria listed in paragraphs 1 to 3 of the rule. The A.A.C. R18-2-702.A(2) criterion is being a point source. Therefore, this rule applies

Potentially Applicable Rule Name	Potentially Applicable Rule	Affected Emission Source	Comment
			to the CBP non-fugitive sources, but no specific requirements are contained in the rule for these sources. Fugitive dust emissions from the proposed CBP will be controlled in accordance with A.A.C. R18-2-604 through R18-2-607, as applicable.
Standards of Performance for Unclassified Sources	P.C.C. 17.16.430	CBP silo baghouses and dust collector	Per P.C.C. 17.16.130(A), the standards in Article IV of Chapter 17.16 apply only to a source that meets all the criteria listed in paragraphs 1 to 3 of the rule. The P.C.C. 17.16.130(A)(2) criterion is being a point source. Therefore, P.C.C. 17.16.430 applies to the CBP non-fugitive sources. Since the CBP has a process weight rate greater than 60,000 pounds per hour, covered emission sources will be subject to the formula in P.C.C. 17.16.430.A.1.b: E = 17.31P0.16, where E is the maximum allowable particulate emission rate in pounds-mass per hour and P is the process weight rate in tons-mass per hour.

12.2.7 Permit Revision Procedures

The applicability of Arizona Department of Environmental Quality (ADEQ) Class I Significant Permit Revision (SPR) procedures to the changes identified above was evaluated. A.A.C. R18-2-320.A states that for Class I sources SPR procedures apply for "an application requesting a permit revision that does not qualify as a minor permit revision or as an administrative amendment." Accordingly, the use of significant permit revision procedures for the Project is governed by whether it meets the requirements for a minor permit revision. Accordingly, the minor permit revision provisions under A.A.C. R18-2-319.A applicable to Class I sources are evaluated below:

1. *Do not violate any applicable requirement;*

The Project does not violate any applicable requirement.

2. *Do not involve substantive changes to existing monitoring, reporting, or recordkeeping requirements in the permit;*

The Project involves substantive changes to existing monitoring, reporting or recordkeeping requirements.

3. *Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination of ambient impacts, or an analysis of impacts on visibility or maximum increases allowed under R18-2-218;*

The proposed Project does not require or change a case-by-case determination of an emission limitation or other standard, a source-specific determination of ambient impacts, or an analysis of impacts on visibility or maximum increases allowed under R18-2-218.

4. *Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed in order to avoid an applicable requirement to which the source would otherwise be subject. The terms and conditions include:*
    a. *A federally enforceable emissions cap that the source would assume to avoid classification as a modification under any provision of Title I of the Act; and*
    b. *An alternative emissions limit approved under regulations promulgated under the section 112(i)(5) of the Act.*

The Project does not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed in order to avoid an applicable requirement to which the source would otherwise be subject. The Project is not seeking to establish or change a federally enforceable emissions cap or an alternative emissions limit approved under the regulations promulgated under section 112(i)5 of the Act.

5. *Are not modifications under any provision of Title I of the Act;*

The Project is not seeking any modifications under any provision of Title I of the Act.

6. *Are not changes in fuels not represented in the permit application or provided for in the permit;*

The Project is proposing to authorize NHSMs to combust them in either the existing Kiln 4 burner or calciner as fuels, including but not limited to engineered fuels, biomass fuels (including, but not limited to, construction and demolition wood, pistachio shells, almond shells and yard clippings), paper cardboard, biosolids, and dust collector bags generated on-site.

Per A.A.C. R18-2-319.A, the addition of alternative fuels is a change that disqualifies a change from being authorized through the MPR mechanism. Per A.A.C R18-2-320.A, changes that do not qualify under an MPR or as an administrative amendment are subject to SPR procedures. As such, CalPortland is proposing to authorize the Project through the SPR mechanism.

7. *Are not minor NSR modifications subject to R18-2-334; and*

As described previously, the Project is not subject to minor NSR.

8. *Are not required to be processed as a significant permit revision under R18-2-320.*

As described previously, the Project involves the addition of alternative fuels, as well as substantive changes to existing monitoring, reporting, or recordkeeping requirements, requiring the Project to be processed through the SPR mechanism under A.A.C. R-18-2-320.

13. COMPLIANCE ASSURANCE MONITORING (CAM)

Pursuant to 40 CFR 64.2(a), Compliance Assurance Monitoring (CAM) applies to pollutant-specific emission units (PSEUs) located at a Title V major source if all the following criteria are met:

- The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant (or surrogate thereof), other than an emission limitation or standard that is exempt under 40 CFR Part 64.2(b)(1);
- The PSEU uses a control device to achieve compliance with any such emission limitation or standard; and
- The PSEU has potential pre-control device emissions (i.e., PTE without consideration of emission reductions due to the use of pollution control devices) of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a Title V major source.

The applicability of CAM as described above relies on the definition of several terms in 40 CFR 64.1. A PSEU is defined as an emissions unit considered separately with respect to each regulated air pollutant. Furthermore, an emission limitation or standard is defined as "any applicable requirement that constitutes an emission limitation, emission standard, standard of performance or means of emission limitation as defined under the Act" including "a work practice, process or control device parameter, or other form of specific design, equipment, operational, or operation and maintenance requirement." EPA documentation suggests that a PSEU can be a collection of emission units if they are subject to a single emission limitation or standard. The potential pre-control device emissions for a PSEU containing multiple emissions would therefore be determined by summing emissions from the individual emission units. CAM requirements would be applicable if the sum is equal to or greater than 100% of the amount, in tons per year, required for a source to be classified as a Title V major source.

40 CFR 64.1 defines a control device as "equipment, other than inherent process equipment, that is used to destroy or remove air pollutant(s) prior to discharge to the atmosphere." Inherent process equipment is defined as "equipment that is necessary for the proper or safe functioning of the process, or material recovery equipment that the owner or operator documents is installed and operated primarily for purposes other than compliance with air pollution regulations." because they help to prevent air pollutants from being generated instead of destroying or removing air pollutants once they have already been generated. Due to pollution prevention techniques not being considered control devices, they can be taken into consideration when determining the potential pre-control device emissions from the PSEUs.

The PSEUs at the Rillito facility that meet the requirements of 40 CFR 64.2(a)(1) and (2) are presented in Table 13-1. Table 13-1 identifies the pollution control device used to capture and control emissions from the PSEUs in order to achieve compliance with the applicable emission limitations or standards. The equipment list in Appendix B, Section 7, Section 12, and the tables in 0 identify the emission limitations or standards applicable to each PSEU. The emission limitations and standards include those for PM and/or opacity as a surrogate for PM_{10} and $PM_{2.5}$. As shown in Section 7, CalPortland has voluntarily accepted emission limitations on various emission units (and associated pollution control devices) at the Rillito facility. For the emission limitations that include multiple emission units, the PSEU is the combination of the emission units.

Potential pre-control device emissions for the PSEUs are also presented in Table 13-1. If the PSEUs' potential pre-control device emissions of the applicable regulated air pollutant are greater than or equal to 100% of the amount required for a source to be classified as a major source, then the PSEU and the corresponding

pollution control device are subject to CAM requirements. For the PSEUs with multiple emission units, the calculation of potential pre-control device emissions is the sum of emissions from the individual emission units. As shown in Table 13-1, there are 30 PSEUs that have PM_{10} emissions greater than 100 tpy. Consequently, these PSEUs are subject to CAM requirements and CAM plans are necessary. Because all PSEUs subject to CAM requirements are controlled by similar dust collectors, a single CAM plan is used to represent the collection of units subject to CAM. The CAM plan is presented in 0.

The methodology used to calculate the potential pre-control device emissions for each PSEU at the Rillito facility is presented within the tables in 0. This includes identification of the emission factors and process rates used in the CAM analysis. A long form calculation methodology can be provided upon request. The emission factors for crushers, screens, and material transfer points take into account the inherent moisture content of the ore processed at the Rillito facility. This is permitted and considered best available information due to inherent moisture content not being considered a control device. The Excel spreadsheets used to calculate potential pre-control device emissions are reproduced in 0. The current CAM Analysis remains unchanged from the previous 2020 permit renewal application.

0 identifies other PSEUs and associated control methods used at the Rillito facility that are not addressed in Table 13-1. The control methods include:

- Unpaved Road Watering and/or Chemical Dust Suppression Use;
- Water Sprays/Wet Suppression;
- Saturation; and
- Bin Vents.

It is not necessary to evaluate the potential pre-control device emissions from the PSEUs associated with the above control methods because the PSEUs do not meet the general applicability requirements of 40 CFR 64.2(a)(1) and (2). Control methods A-C do not meet the definition of a control device because they are not used to destroy or remove air pollutant(s) prior to discharge to the atmosphere. Instead, they are considered pollution prevention techniques that prevent air pollutant(s) from being generated. Control method D is considered inherent process equipment because it is primarily used for product recovery or for the safe operation of the process equipment. Consequently, the PSEUs associated with control methods A-D are not subject to CAM requirements.

For the emission units that will be added as part of the significant permit revision, it has been determined that each new unit will not be subject to CAM requirements, as they will be subject to exempt emission standards under 40 CFR Part 64.2(b)(1) or use exempt control methods outlined above or they are not subject to an emission limitation or standards. These units were determined to be exempt from CAM requirements as follows:

- Twin Peaks Rock and Aggregate Plant, Cotton Field Primary and Overland Plant, new Manufactured Fines Plant, and Wash Plant additions are exempt through usage of water suppression, saturation, and/or applicability to NSPS Subpart OOO as described in Section 12.2.3.3 (i.e., Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act);
- D2 Bypass addition will be subject to NESHAP LLL as described in Section 12.2.4.2 (i.e., Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act).
- None of the emission units associated with the proposed CBP are subject to an emission limitation or standard. Therefore, the CBP PSEUs do not meet the applicability criterion of 40 CFR 64.2(a)(1) and are not subject to CAM requirements

Table 13-1. CAM Applicability Summary

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
I. Quarry Crusher System						
I.1	Vibrating Grizzly B2-VG1 to Belt Feeder B2-BF1	No	Dust Collector B2-DC1	86.64	13.07	No
I.2	Impact Crusher B2-IC1 to Belt Feeder B2-BF1	No				
I.3	Belt Conveyor B3-BC2 to Impact Crusher B2-IC1 & Crushing	No				
I.4	Belt Feeder B2-BF1 to Belt Conveyor B2-BC1	No				
I.5	Belt Conveyor B2-BC1 to Vibrating Screen B3- VS1	No	Dust Collector B3-DC1	68.65	6.78	No
I.6	Vibrating Screen B3-VS1	Yes				
I.7	Vibrating Screen B3-VS1 to Belt Conveyor B3- BC1	No				
I.8	Belt Conveyor B3-BC1 to Belt Conveyor B3-BC2	No				
I.9	Vibrating Screen B3-VS1 to Belt Conveyor B3- BC3	No				
II. Overland Conveyor System						
II.1	Belt Conveyor B5-BC1 to Belt Conveyor B5-BC2	No	Dust Collector B5-DC1	25.29	3.83	No
II.2	Belt Conveyor B5-BC2 to Belt Conveyor B5-BC3	No	Dust Collector B5-DC2	25.29	3.83	No
II.3	Belt Conveyor B5-BC3 to Belt Conveyor B5-BC4	No	Dust Collector B5-DC3	25.29	3.83	No
III. Stacker/Reclaimer and Storage Area						
III.1	Belt Conveyor B5-BC4 to Belt Conveyor B7-BC1	No	Dust Collector B7-DC1	22.85	3.46	No
III.2	Belt Conveyor B5-BC4 to Belt Conveyor B11- BC1	Yes				
III.3	Belt Conveyor B5-BC4 to Belt Conveyor B8-BC1	No	Dust Collector B8-DC1	5.21	0.79	No

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
III.4	Belt Conveyor B8-BC1 to Belt Conveyor B8- BC1A	No	Dust Collector B8-DC2	5.21	0.79	No
IV. Roller Mill Feed Area						
IV.1	Belt Conveyor C2-BC3 to Belt Conveyor C2-BC4	No	Dust Collector C2-DC1	20.57	3.12	No
IV.2	Belt Conveyor C2-BC3 to Belt Conveyor C2-BC7	No				
IV.3	Belt Conveyor C2-BC7 to Storage Bin C2-SB7	No	Dust Collector C2-DC3	20.57	3.12	No
IV.4	Belt Conveyor C2-BC7 to Storage Bin C2-SB8	No				
IV.5	Belt Scale D4-BS1 to Belt Conveyor D4-BC1	No	Dust Collector D4-DC1	23.42	3.55	No
IV.6	Belt Scale D4-BS2 to Belt Conveyor D4-BC1	No				
IV.7	Belt Scale D4-BS3 to Belt Conveyor D4-BC1	No				
IV.8	Belt Scale D4-BS4 to Belt Conveyor D4-BC1	No				
IV.9	Belt Scale D4-BS5 to Belt Conveyor D4-BC1	No				
IV.10	Belt Scale D4-BS6 to Belt Conveyor D4-BC1	No				
IV.11	Bucket Elevator D4-BE1 to Drag Conveyor D4-DR1	No	Dust Collector D4-DC2	5.69	0.86	No
IV.12	Drag Conveyor D4-DR1 to Storage Bins D4-SB3, D4-SB4, D4-SB5, and D4-SB6	No				
V. Roller Mill						
V.1	Separator D4-SS1 to Cyclone D4-CC1	Yes	Dust Collector H5-GB	810.00	366.67	Exempt
V.2	Separator D4-SS1 to Cyclone D4-CC2	Yes				
V.3	Separator D4-SS1 to Cyclone D4-CC3	Yes				

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
V.4	Separator D4-SS1 to Cyclone D4-CC4	Yes				
VI. Homogenizing and Kiln Feed Silos						
VI.1	Air Slide D4-AS3 to Homogenizing Silo F2-SB1	No	Dust Collector F2-DC1	587.50	587.50	Yes
VI.2	Air Slide F2-AS5 to Pneumatic Conveyance System F2-POD	No	Dust Collector F2-DC4	158.63	158.63	Yes
VI.3	Air Slide F2-AS3 to Kiln Feed Storage Silo F3-SB1	Yes	Dust Collector F3-DC1	214.44	214.44	Exempt
VI.4	Air Slide F2-AS3 to Kiln Feed Storage Silo F3-SB2	Yes	Dust Collector F3-DC2	214.44	214.44	Exempt
VII. Raw Feed Materials to Rock Storage						
VII.1	Pan Conveyor B9-PF1 to Belt Conveyor B9-BC1	No	Dust Collector B9-DC1	0.94	0.14	No
VII.2	Belt Conveyor B9-BC1 to Vibrating Screen B9- VS1	No	Dust Collector B9-DC2	1.58	0.17	No
VII.3	Belt Conveyor B9-BC3 to Vibrating Screen B9- VS1	No				
VII.4	Vibrating Screen B9-VS1	Yes				
VII.5	Belt Conveyor B9-BC2 to Vibrating Screen B9- VS2	No	Dust Collector B9-DC3	2.65	0.34	No
VII.6	Vibrating Screen B9-VS2	No				
VII.7	Vibrating Screen B9-VS2 to Belt Conveyor B9- BC4	#N/A				
VII.8	Impact Crusher B9-IC to Belt Conveyor B9-BC2	No	Dust Collector B9-DC5	0.14	0.01	No
VIII. Raw Grinding - AC Area						
VIII.1	Belt Scale AC-BS1 to Belt Conveyor AC-BC1	Yes	Dust Collector AC-DC3	6.54	0.99	No
VIII.2	Belt Scale AC-BS2 to Belt Conveyor AC-BC1	Yes				

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
VIII.3	Separator AC1-SS1 to AC-S1	No				
VIII.4	Separator AC1-SS2 to AC-S1	No				
VIII.5	Separator AC1-SS3 to AC-S1	No				
VIII.6	Separator AC1-SS4 to AC-S1	No				
VIII.7	AC1-Mill	No	Dust Collector AC1-DC1	185.46	81.28	Yes
VIII.8	Screw Conveyor AC1-SC1 to Bucket Elevator AC1-BE1	No				
VIII.9	Bucket Elevator AC1-BE1 to Separator AC1-SS	No				
VIII.10	AC2-Mill	No	Dust Collector AC2-DC1	185.46	81.28	Yes
VIII.11	Screw Conveyor AC2-SC1 to Bucket Elevator AC2-BE1	No				
VIII.12	Bucket Elevator AC2-BE1 to Separator AC2-SS	No				
VIII.13	AC3-Mill	No	Dust Collector AC3-DC1	185.46	81.28	Yes
VIII.14	Screw Conveyor AC3-SC1 to Bucket Elevator AC3-BE1	No				
VIII.15	Bucket Elevator AC3-BE1 to Separator AC3-SS	No				
VIII.16	AC4-Mill	No	Dust Collector AC4-DC1	185.46	81.28	Yes
VIII.17	Screw Conveyor AC4-SC1 to Bucket Elevator AC4-BE1	No				
VIII.18	Bucket Elevator AC4-BE1 to Separator AC4-SS	No				
IX. Proportioning Silos						
IX.1	Screw Conveyor AC-SC3 to Bucket Elevator AC-BE2	No	Dust Collector AC-BE2- DC	317.25	317.25	Yes

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
IX.2	Bucket Elevator AC-BE2 to Screw Conveyor AC-SC4	Yes				
IX.3	Pneumatic Conveyance System F2-POD to Alleviator AC-A1	No	Dust Collector AC-DC1	158.63	158.63	Yes
IX.4	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB1	No	Dust Collector F2-PS- DC1	237.94	237.94	Yes
IX.5	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB3	No				
IX.6	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB5	No				
IX.7	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB7	No				
IX.8	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB9	No				
IX.9	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB11	No				
IX.10	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB2	No	Dust Collector F2-PS- DC2	237.94	237.94	Yes
IX.11	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB4	No				
IX.12	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB6	No				
IX.13	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB8	No				
IX.14	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB10	No				
IX.15	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB12	No				
IX.16	Screw Conveyor F2-PS-SC4 to Bucket Elevator F2-PS-BE1	No	Dust Collector F2-PS- DC3	634.50	634.50	Yes
IX.17	Bucket Elevator F2-PS-BE1 to Screw Conveyor F2-PS-SC5	No				

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
X. Kilns 1, 2, and 3 Feed Silos						
X.1	Screw Conveyor F2-PS-SC9 to Silo F3-KS-SB1	No	Dust Collector F3-KS- DC1	317.25	317.25	Yes
X.2	Screw Conveyor F2-PS-SC9 to Silo F3-KS-SB2	No				
X.3	Screw Conveyor F2-PS-SC10 to Silo F3-KS-SB3	No				
X.4	Screw Conveyor F2-PS-SC10 to Silo F3-KS-SB4	No				
X.5	Screw Conveyor F2-PS-SC11 to Silo F3-KS-SB5	No				
X.6	Screw Conveyor F2-PS-SC11 to Silo F3-KS-SB6	No				
XI. Kilns 1, 2, and 3						
XI.1	Screw Conveyor F3-KS-SC5 to Kiln #1 Bin	No	Dust Collector H4-K1- DC	105.75	105.75	Yes
XI.2	Screw Conveyor F3-KS-SC5 to Kiln #2 Bin	No	Dust Collector H4-K2- DC	105.75	105.75	Yes
XI.3	Screw Conveyor F3-KS-SC5 to Kiln #3 Bin	No	Dust Collector H4-K3- DC	105.75	105.75	Yes
XI.4	Kilns 1, 2, and 3 exhaust to H5-5-GB Baghouse	No	Dust Collector / Baghouse H5-5-GB	31.45	2.61	No
XI.5	Screw Conveyor H5-5-GB-SC3 to Bucket Elevator H5-5-GB-BE1	Yes	Dust Collector H5-5- DC1	31.73	31.73	Exempt
XI.6	Dust Pump H5-5-FP1 to H5-5 Waste Dust Bin	Yes	Dust Collector H5-5- DC2	0.006	0.006	Exempt
XII. Clinker Coolers 1, 2, and 3						
XII.1	Clinker Cooler H2-QC1 Exhaust	No	Dust Collector H2-1-DC	32.59	29.65	No
XII.2	Clinker Cooler H2-QC1 to Drag Conveyor H2- QC1-DR1	No				
XII.3	Clinker Cooler H2-QC2 Exhaust	No	Dust Collector H2-2-DC	32.59	29.65	No

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
XII.4	Clinker Cooler H2-QC2 to Drag Conveyor H2- QC2-DR1	No				
XII.5	Clinker Cooler H2-QC3 Exhaust	No	Dust Collector H2-3-DC	32.59	29.65	No
XII.6	Clinker Cooler H2-QC3 to Drag Conveyor H2- QC3-DR1	No				
XII.7	Bucket Elevator H2-K1-BE1 to Belt Conveyor H2-KB1	No	Dust Collector H2-KB1- DC	28.98	28.98	No
XII.8	Bucket Elevator H2-K2-BE1 to Pan Feeder H2-PF2 (Magaldi)	No	Dust Collector H2-KB3- DC	86.95	86.95	No
XII.9	Drag Conveyor H2-K3-DR1 to Bucket Elevator H2-K3-BE1	No				
XII.10	Bucket Elevator H2-K3-BE1 to Pan Feeder H2-PF2	No				
XIII. Preheater and Kiln 4						
XIII.1	Air Slide F3-AS6 to Raw Mix Bin H4-SB-KS	Yes	Dust Collector H4-DC1	1,286.63	1,286.63	Exempt
XIII.2	Belt Scale H4-BS1 to Bucket Elevator H4-BE1	Yes				
XIII.3	Bucket Elevator H4-BE1 to Bucket Elevator H4-BE2	Yes				
XIII.4	Kiln 4 Exhaust to H5-GB Baghouse	Yes	Dust Collector / Baghouse H5-GB	86.23	15.97	Exempt
XIII.5	Bucket Elevator H5-BE1 to H5 Dust Bin	Yes	Dust Collector H5-K4- DC1 / H5-DC1	39.95	39.95	Exempt
XIV. Clinker Cooler 4						
XIV.1	Clinker Cooler Exhaust to H2-GB Baghouse	Yes	Dust Collector / Baghouse H2-GB	33.64	6.23	Exempt
XIV.2	Drag Conveyor H2-DR1 to Pan Feeder H2-PF1	Yes	Dust Collector H2-DC1	540.50	540.50	Exempt

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
XIV.3	Pan Feeder H2-PF1 to Pan Feeder H2-PF2 (Magaldi)	Yes				
XIV.4	Pan Feeder H2-PF2 to Rock Storage	No	Dust Collector H2-DC2	167.33	167.33	Yes
XIV.5	Bucket Elevator H2-BE1 to Storage Bin H2-SB1	Yes	Dust Collector H2-DC3	3.37	3.37	Exempt
XV. Clinker/Gypsum Transport and Finish Mill Feed Bins						
XV.1	Belt Conveyor C2-BC9 to Belt Conveyor C2-BC5	No	Dust Collector C2-DC2	26.40	26.40	No
XV.2	Belt Conveyor C2-BC8 to Belt Conveyor C2-BC9	No	Dust Collector C2-DC4	138.96	138.96	Yes
XV.3	Belt Conveyor C2-BC11 to Storage Bin C2-SB1	No	Dust Collector C2-DC5	37.52	37.52	No
XV.4	Belt Conveyor C2-BC6 to Storage Bin C2-SB2	No	Dust Collector C2-DC6	12.51	12.51	No
XV.5	Belt Conveyor C2-BC10 to Storage Bin C2-SB3	No	Dust Collector C2-DC7	37.52	37.52	No
XV.6	Belt Conveyor C2-BC5 to Storage Bin C2-SB4	No	Dust Collector C2-DC8	5.54	5.54	No
XV.7	Belt Conveyor C2-BC11 to Storage Bin C2-SB5	No	Dust Collector C2-DC9	37.52	37.52	No
XV.8	Belt Conveyor C2-BC6A to Storage Bin C2-SB6	No	Dust Collector C2-DC10	8.34	8.34	No
XV.9	Belt Conveyor C2-BC9 to Belt Conveyor C2- BC10	No	Dust Collector C2-DC11	112.55	112.55	Yes
XV.10	Belt Conveyor C2-BC10 to Belt Conveyor C2-BC11	No	Dust Collector C2-DC12	112.55	112.55	Yes
XV.11	Belt Conveyor C2-BC5 to Belt Conveyor C2-BC6	No	Dust Collector C2-DC13	20.84	20.84	No
XV.12	Belt Conveyor C2-BC5 to Belt Conveyor C2- BC6A	No				
XV.13	Belt Conveyor C2-BC4 to Belt Conveyor C2-BC5	No				
XV.14	Belt Conveyor D2-BC1 to Belt Conveyor D2-BC2	No	Dust Collector D2-DC1	138.96	138.96	Yes

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
XV.15	Belt Conveyor D2-BC2 to Belt Conveyor D2-BC6	No	Dust Collector D2-DC3	138.96	138.96	Yes
XV.16	Belt Scale D2-BS5 to Belt Conveyor D2-BC1	Yes	Dust Collector D2-DC5	45.86	45.86	Exempt
XV.17	Belt Scale D2-BS6 to Belt Conveyor D2-BC1	Yes				
XV.18	Belt Scale D2-BS3 to Belt Conveyor D2-BC1	Yes	Dust Collector D2-DC6	43.06	43.06	Exempt
XV.19	Belt Scale D2-BS4 to Belt Conveyor D2-BC1	Yes				
XV.20	Belt Scale D2-BS1 to Belt Conveyor D2-BC1	Yes	Dust Collector D2-DC7	50.02	50.02	Exempt
XV.21	Belt Scale D2-BS2 to Belt Conveyor D2-BC1	Yes				
XVI. Finish Milling - CM Area						
XVI.1	Mill CM1-M to Bucket Elevator CM1-BE1	No	Dust Collector CM1- DC1	96.13	96.13	No
XVI.2	Screw Conveyor CM1-SC1 to Separator CM1-SS	No				
XVI.3	Mill CM2-M to Bucket Elevator CM2-BE1	No	Dust Collector CM2- DC1	96.13	96.13	No
XVI.4	Screw Conveyor CM2-SC1 to Separator CM2-SS	No				
XVI.5	Mill CM3-M to Bucket Elevator CM3-BE1	No	Dust Collector CM3- DC1	96.13	96.13	No
XVI.6	Screw Conveyor CM3-SC1 to Separator CM3-SS	No				
XVI.7	Mill CM4-M to Bucket Elevator CM4-BE1	No	Dust Collector CM4- DC1	96.13	96.13	No
XVI.8	Screw Conveyor CM4-SC1 to Separator CM4-SS	No				
XVI.9	Mill CM5-M to Bucket Elevator CM5-BE1	No	Dust Collector CM5- DC1	96.13	96.13	No
XVI.10	Screw Conveyor CM5-SC1 to Separator CM5-SS	No				
XVI.11	Mill CM6-M to Bucket Elevator CM6-BE1	No	Dust Collector CM6- DC1	96.13	96.13	No

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
XVI.12	Screw Conveyor CM6-SC1 to Separator CM6-SS	No				
XVI.13	Mill CM7-M	No	Dust Collector CM7- DC1	78.46	78.46	No
XVI.14	Belt Scale CM7-BS1 to Belt Conveyor CM7-BC1	Yes	Dust Collector CM7- DC2	59.71	59.71	Exempt
XVI.15	Belt Scale CM7-BS2 to Belt Conveyor CM7-BC1	Yes				
XVI.16	Belt Scale CM7-BS3 to Belt Conveyor CM7-BC1	Yes				
XVI.17	Separator CM7-SS1	Yes	Dust Collector CM7- DC3	271.32	271.32	Exempt
XVI.18	Drag Conveyor CM-DR1 to Mill CM2-M	No	Dust Collector CM-DC4	32.94	32.94	No
XVI.19	Drag Conveyor CM-DR1 to Mill CM1-M	No				
XVI.20	Bucket Elevator CM-BE4 to Drag Conveyor CM-DR1	No	Dust Collector CM-DC5	375.49	375.49	Yes
XVI.21	Belt Scale CM-BS3 to Belt Conveyor CM-BC1	Yes				
XVI.22	CM-BC1 to CM-DR	Yes				
XVI.23	CM-DR to CM-BE4	No				
XVI.24	Bucket Elevator CM-BE4 to Drag Conveyor CM-DR2	No				
XVI.25	Truck to Storage Silo CM-MA-BIN1	No	Dust Collector CM-MA- DC1	1.97	1.97	No
XVI.26	Truck to Storage Silo CM-MA-BIN2	No				
XVI.27	Truck to Storage Silo CM-MA-BIN3	No				
XVII. Finish Milling - D2 Area						
XVII.1	Air Slide D2-AS1 to Pump D2-FP1	No	Dust Collector D2-DC4	138.96	138.96	Yes
XVII.2	Finish Mill D2-1-M	No	Dust Collector D2-1- DC1	181.93	181.93	Yes
XVIII. Finish Milling - D3 Area						

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
XVIII.1	Finish Mill D3-1	Yes	Dust Collector D3-1- DC1	1,249.17	1,249.17	Exempt
XVIII.2	Air Slide D3-1-AS10 to Air Slide D3-1-AS11	Yes				
XVIII.3	Air Slide D3-1-AS13 to Pneumatic Pump D3-1-FP1	Yes				
XVIII.4	Roll Press D3-1-HRP1 and D3-1-HRP2 (Same Piece of Equipment)	Yes				
XVIII.5	Air Slide D3-1-AS11 to Air Slide D3-1-AS13	Yes				
XVIII.6	Air Slide D3-1-AS11 to Air Slide D3-1-AS12	Yes	Dust Collector D3-1- DC2	111.16	111.16	Exempt
XVIII.7	Belt Scale D3-1-BS1 to Belt Conveyor D3-1-BC1	Yes	Dust Collector D3-1- DC3	1,538.52	1,538.52	Exempt
XVIII.8	Belt Scale D3-1-BS2 to Belt Conveyor D3-1-BC1	Yes				
XVIII.9	Belt Conveyor D3-1-BC1 to Belt Conveyor D3-1-BC2	Yes				
XVIII.10	Belt Conveyor D3-1-BC2 to Bucket Elevator D3- 1-BE1	Yes				
XVIII.11	Belt Conveyor D3-1-BC3 to Belt Conveyor D3-1-BC4	Yes				
XVIII.12	Belt Conveyor D3-1-BC4 to Roll Press D3-1-HRP	Yes				
XVIII.13	Belt Conveyor D3-1-BC5 to Bucket Elevator D3- 1-BE1	Yes				
XVIII.14	Bucket Elevator D3-1-BE1 to Belt Conveyor D3-1-BC3	Yes				
XVIII.15	Air Slide D3-1-AS7 to Air Slide D3-1-AS8	Yes				
XIX. Product Storage and Bulk Loadout						
XIX.1	Belt Conveyor BL-SC2 to Belt Conveyor BL-SC4	No	Dust Collector BL-DC1	278.46	278.46	Yes

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
XIX.2	Belt Conveyor BL-SC3 to Belt Conveyor BL-SC5	No	Dust Collector BL-DC2	278.46	278.46	Yes
XIX.3	Storage Bin BL-SB1 to Bucket Elevator BL-BE1	No	Dust Collector BL-DC3	278.46	278.46	Yes
XIX.4	Storage Bin BL-SB1 to Bucket Elevator BL-BE2	No	Dust Collector BL-DC4	278.46	278.46	Yes
XIX.5	Screw Conveyor BL-SB3-SC to Rail Car	Yes	Dust Collector BL-DC5	72.85	72.85	Exempt
XIX.6	Air Slide BL-AS2A to Truck	No	Dust Collector BL-DC6	256.60	256.60	Yes
XIX.7	Air Slide BL-AS2B to Truck	No				
XIX.8	Pneumatic Conveyor PH-FP1 to Storage Bin BL-SB4	No	Dust Collector BL-DC7	21.86	21.86	No
XIX.9	Bucket Elevator BL-BE3 to Storage Bin BL-SB5	Yes	Dust Collector BL-SB5- DC1	21.86	21.86	Exempt
XIX.10	Air Slide BL-SB5-AS2 to Truck	Yes	Dust Collector BL-SB5- DC2	13.11	13.11	Exempt
XIX.11	Air Slide BL-SB5-AS1 to Rail	Yes	Dust Collector BL-SB5- DC3	8.74	8.74	Exempt
XIX.12	Alleviator CM-A1 to Storage Bin CS-SB19	Yes	Dust Collector CM-DC8	34.33	34.33	Exempt
XIX.13	Alleviator CM-A2 to Storage Bin CS-SB14	Yes	Dust Collector CM-DC9	124.70	124.70	Exempt
XIX.14	Alleviator CM-A2 to Storage Bin CS-SB15	Yes				
XIX.15	Alleviator CM-A2 to Storage Bin CS-SB17	Yes				
XIX.16	Alleviator CM-A2 to Storage Bin CS-SB18	Yes				
XIX.17	Alleviator CM-A3 to Storage Bin CS-SB4	Yes	Dust Collector CM- DC10	65.10	65.10	Exempt
XIX.18	Alleviator CM-A3 to Storage Bin CS-SB5	Yes				
XIX.19	Alleviator CM-A3 to Storage Bin CS-SB11	Yes				

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
XIX.20	Alleviator CM-A4 to Storage Bin CS-SB7	Yes	Dust Collector CM- DC11	10.42	10.42	Exempt
XIX.21	Alleviator CM-A4 to Storage Bin CS-SB8	Yes				
XIX.22	Alleviator CM-A4 to Storage Bin CS-SB9	Yes				
XIX.23	Alleviator CM-A4 to Storage Bin CS-SB10	Yes				
XIX.24	Alleviator CM-A5 to Storage Bin CS-SB1	Yes	Dust Collector CM- DC12	23.42	23.42	Exempt
XIX.25	Alleviator CM-A5 to Storage Bin CS-SB2	Yes				
XIX.26	Alleviator CM-A5 to Storage Bin CS-SB3	Yes				
XIX.27	Alleviator CM-A3 to Storage Bin CS-SB6	Yes	Dust Collector CM- DC14	56.04	56.04	Exempt
XIX.28	Alleviator CM-A2 to Storage Bin CS-SB16	Yes				
XIX.29	Alleviator CM-A3 to Storage Bin CS-SB12	Yes	Dust Collector CM- DC15	56.04	56.04	Exempt
XIX.30	Alleviator CM-A2 to Storage Bin CS-SB13	Yes				
XIX.31	Alleviator CM-A1 to Storage Bin CS-SB21	Yes	Dust Collector CM- DC16	103.00	103.00	Exempt
XIX.32	Alleviator CM-A1 to Storage Bin CS-SB22	Yes	Dust Collector CM- DC16			
XIX.33	Alleviator CM-A1 to Storage Bin CS-SB23	Yes	Dust Collector CM- DC16			
XIX.34	Alleviator CM-A1 to Storage Bin CS-SB20	No	Dust Collector CM- DC17	34.33	34.33	No
XX. Cement Packhouse						
XX.1	Bucket Elevator PH-BE1 to Rotary Screen PH-RS1	No	Dust Collector PH-DC1	81.43	81.43	No
XX.2	Rotary Screen PH-RS1 to Storage Bin PH-SB1	No				

Emission Source		Exempt from CAM?	Control Device	Potential Pre-Control Device Emissions from the PSEU (tpy)		Subject To CAM?
ID	Description			PM_{10}	$PM_{2.5}$	
XX.3	Cement Packer PH-PK3 to Bag	No				
XX.4	Spill Bin	No				
XX.5	Spill Bin to Screw Conveyor PH-SC2	No				
XX.6	Bucket Elevator PH-BE2 to Rotary Screen PH-RS2	No	Dust Collector PH-DC2	131.34	131.34	Yes
XX.7	Rotary Screen PH-RS2 to Storage Bin PH-SB2	No				
XX.8	Cement Packer PH-PK4 to Bag	No				
XX.9	Spill Bin.	No				
XX.10	Spill Bin to Screw Conveyor PH-SC4	No				
XX.11	Mortar Import Bin to Screw Conveyor PH-SC8N	Yes	Dust Collector PH-DC3	21.86	21.86	Exempt
XX.12	Screw Conveyor PH-SC9 to Packhouse Hopper	Yes	Dust Collector PH-DC4	21.86	21.86	Exempt
XX.13	PH-P3-BC5 to Palletizer PH-PZ3	Yes	Dust Collector PH-DC5	4.04	4.04	Exempt
XXI. Solid Fuel (Coal/Coke) System						
XXI.1	Storage Bin H3-K4-WF1-SB or H3-K4-WF2-SB to Rotor Scale H3-K4-WF1 or H3-K4-WF2	No	Dust Collectors H3-K4- DC1 & H3-K4-DC2	4.11	0.63	No

14. PERMIT PROCESSING FEE

In accordance with A.A.C R18-2-326, Fees Related to Individual Permits, and the ADEQ Permit Fee Schedule[12] (effective November 1, 2024), no fee is being submitted with this Class I permit renewal and significant permit revision application. However, CalPortland agrees to pay the $202.60 per hour processing fee required based on the total actual time spent by ADEQ staff on processing this application as well as any fees associated with public notice.

[12] https://static.azdeq.gov/aqd/aqd_class_fees.pdf

15. COMPLIANCE PLAN AND SCHEDULE

As required by Permit 85424(113625), CalPortland is committed to maintaining compliance schedule as follows:

- For applicable requirements with which the source is in compliance at the time of permit issuance.

  The facility will continue to comply with all existing applicable requirements.

- For applicable requirements that will become effective during the permit term.

  The facility will meet in a timely manner applicable requirements that become effective during the permit term. CalPortland is not presently aware of any particular applicable requirements requiring a more specific future schedule. Furthermore, CalPortland shall submit a compliance certification annually which describes the compliance status of the facility with respect to each permit condition.

- A schedule of compliance for sources that are not in compliance with all applicable requirements at the time of permit issuance. Such a schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the source will be in noncompliance at the time of permit issuance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based.

  The facility is currently in compliance with all applicable requirements. Therefore, no compliance schedule is required. A copy of the most recent compliance certification is provided in 0.

- A schedule for the submission of certified progress reports no less frequently than every 6 months for sources required to have a schedule of compliance to remedy a violation.

  Because a compliance schedule is not required, a schedule for submission of certified progress reports is likewise not required.

16. COMPLIANCE CERTIFICATION

As required by Attachment "A", Condition VII.A of the permit, the most recent compliance certification for CalPortland was submitted to the EPA and ADEQ by the due date of May 15, 2026. This certification identified CalPortland's compliance status with all applicable Title V requirements. CalPortland will continue to comply with all applicable requirements and will, in a timely manner, meet any additional applicable requirements that become effective during the permit term.

I certify that based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate, and complete.

Name: Gurjeet Singh Sarao

Title: Plant Manager

Signature: _____ Date: 11/09/26

APPENDIX A. EMISSION CALCULATIONS

Table 1-a1. Inputs - Twin Peaks Rock and Stone Plant Existing Configuration Throughput

Maximum Permitted Throughput [1] (tpy)
Twin Peaks Rock and Stone Plant
800,000
Cotton Field Primary and Overland
800,000

[1] Per ADEQ Permit No. 85424 condition III.B(1) in Attachment "B".

Table 1-a2. Inputs - Twin Peaks Rock and Stone Plant and Cotton Field Primary and Overland - Existing Material Transfers

Emission Source Description [1]	Proposed Updated Permit Equipment ID [2]	Current Permit Equipment ID	% of Material Processed [2]	Control Method [3]	% Control Efficiency [3]
Primary Crushing from Quarry					
Belt Conveyor B11-BC2 to Belt Conveyor B11-TS-BC1	B11-TS-BC1	B11-TS-BC1	100%	Water-based Wet Suppression	90%
Belt Conveyor B11-TS-BC1 to Belt Conveyor B11-TS-BC2	B11-TS-BC2	B11-TS-BC2	100%	Upstream Water-based Wet Suppression	90%
Belt Conveyor B11-TS-BC2 to the Aggregate Plant Feed Stockpile	Aggregate Plant Feed Stockpile	N/A	100%	Upstream Water-based Wet Suppression	90%
Aggregate Plant Feed Stockpile Loadout			100%	Water-based Wet Suppression	90%
Twin Peaks Rock and Stone Aggregate Plant					
Loader Transfer into Hopper 1	Hopper 1	Hopper 1	96%	Water-based Wet Suppression	90%
Hopper 1 into Conveyor C-1	C-1	C-4	96%	Water-based Wet Suppression	90%
Conveyor C-1 into Conveyor C-2	C-2	C-5	96%	Water-based Wet Suppression	90%
Conveyor C-2 into Screen S-1	S-1	Portable Screen	96%	Water-based Wet Suppression	In emission factor
Screen S-1			46%	Water-based Wet Suppression	In emission factor
Screen S-1 into Conveyor C-4	C-4	Portable Belt Conveyor	37%	Water-based Wet Suppression	In emission factor
Screen S-1 into Conveyor C-5	C-5	C-7	54%	Water-based Wet Suppression	In emission factor
Screen S-1 into Conveyor C-9	C-9	C-46	8%	Water-based Wet Suppression	In emission factor
Conveyor C-4 into Conveyor C-3	C-3	C-26	37%	Water-based Wet Suppression	90%
Conveyor C-3 into Conveyor C-13	C-13	C-16	37%	Water-based Wet Suppression	90%
Conveyor C-13 into 1/2" Screen Fill Material Pile	1/2" Screen Fill Material Pile	N/A	37%	Upstream Water-based Wet Suppression	90%
1/2" Screen Fill Material Pile Loadout			37%	Water-based Wet Suppression	90%
Conveyor C-5 into Crusher CR-1	CR-1	Portable Crusher	54%	TP-DC1 Baghouse	Emissions Routed to TP-DC1
Crusher CR-1			54%	TP-DC1 Baghouse	Emissions Routed to TP-DC1
Crusher CR-1 to Conveyor C-6	C-6	C-6	54%	TP-DC1 Baghouse	Emissions Routed to TP-DC1
Conveyor C-6 into Conveyor C-7	C-7	C-33	54%	Water-based Wet Suppression	90%
Conveyor C-7 into Screen S-2	S-2	S-6	54%	Water-based Wet Suppression	In emission factor
Screen S-2			54%	Water-based Wet Suppression	In emission factor
Screen S-2 into Conveyor C-11	C-11	C-35	10%	Water-based Wet Suppression	In emission factor
Conveyor C-11 into Conveyor C-5	C-5	C-7	10%	Water-based Wet Suppression	90%
Screen S-2 into Conveyor C-8	C-8	C-6	50%	Water-based Wet Suppression	In emission factor
Conveyor C-8 into Conveyor C-10	C-10	C-31	53%	Water-based Wet Suppression	90%
Conveyor C-9 into Conveyor C-10		C-31	8%	Water-based Wet Suppression	90%
Conveyor C-4 into Conveyor C-10		C-31	37%	Upstream Water-based Wet Suppression	90%
Conveyor C-10 into Splitter 1	Splitter 1	N/A	53%	Water-based Wet Suppression	90%
Splitter 1 into Conveyor C-12	C-12	C-32	42%	Water-based Wet Suppression	90%
Twin Peaks Lime Silo	AGG-LS1	AGG-LS1	21%	AG-LS1-DC Bin Vent	In emission factor
Splitter into Conveyor C-14	C-14	N/A (existing)	19%	Water-based Wet Suppression	90%
Lime Silo into Conveyor C-14			21%	Water-based Wet Suppression	90%
Conveyor C-14 into Conveyor C-15	C-15	N/A (existing)	21%	Water-based Wet Suppression	90%
Conveyor C-15 into Conveyor C-26	C-26	N/A (existing)	21%	Water-based Wet Suppression	90%
Conveyor C-26 into Limestone Stockpile	Limestone Stockpile	N/A	21%	Upstream Water-based Wet Suppression	90%
Limestone Stockpile Loadout			21%	Water-based Wet Suppression	90%
Loader into Hopper 2	Hopper 2	Hopper 2	4%	Water-based Wet Suppression	90%
Hopper 2 into Conveyor C-29	C-29	N/A	4%	Upstream Water-based Wet Suppression	90%
Conveyor C-29 into Conveyor C-14	C-14	N/A (existing)	4%	Water-based Wet Suppression	90%
Conveyor C-12 into Conveyor C-25	C-25	C-10	42%	Water-based Wet Suppression	90%
Conveyor C-25 into Splitter 2	Splitter 2	N/A	42%	Water-based Wet Suppression	90%
Splitter 2 into Screen S-3	S-3	S-11	21%	Water-based Wet Suppression	In emission factor
Screen S-3			21%	Water-based Wet Suppression	In emission factor
Splitter 2 into Screen S-4	S-4	S-12	21%	Water-based Wet Suppression	In emission factor
Screen S-4			21%	Water-based Wet Suppression	In emission factor
Screen S-3 into Conveyor C-17 (3/8")	C-17	C-12	1%	Water-based Wet Suppression	In emission factor
Screen S-3 into Conveyor C-18 (3/16")	C-18	C-27	5%	Water-based Wet Suppression	In emission factor
Screen S-3 into Conveyor C-27 (3/4")	C-27	C-11	9%	Water-based Wet Suppression	In emission factor
Conveyor C-27 into Conveyor C-28	Conveyor C-28	C-30	2%	Water-based Wet Suppression	90%
Conveyor C-28 into Conveyor C-11	C-11	C-35	2%	Water-based Wet Suppression	90%
Conveyor C-27 into Conveyor C-16	Conveyor C-16	C-15	2%	Water-based Wet Suppression	90%
Conveyor C-16 into Product Pile 3	Product Pile 3	N/A	2%	Upstream Water-based Wet Suppression	90%
Product Pile 3 Loadout			2%	Water-based Wet Suppression	90%
Conveyor C-17 into Conveyor C-20	C-20	C-34	13%	Water-based Wet Suppression	90%
Conveyor C-20 into Product Pile 1	Product Pile 1	N/A	13%	Upstream Water-based Wet Suppression	90%
Product Pile 1 Loadout			13%	Water-based Wet Suppression	90%
Conveyor C-18 into Conveyor C-19	C-19	N/A (existing)	8%	Water-based Wet Suppression	90%

Conveyor C-19 into Product Pile 2	Product Pile 2	N/A	8%	Upstream Water-based Wet Suppression	90%
Product Pile 2 Loadout			8%	Water-based Wet Suppression	90%
Screen S-4 into Conveyor C-17 (3/8")	C-17	C-12	1%	Water-based Wet Suppression	In emission factor
Screen S-4 into Conveyor C-18 (3/16")	C-18	C-27	5%	Water-based Wet Suppression	In emission factor
Screen S-4 into Conveyor C-27 (3/4")	C-27	C-11	9%	Water-based Wet Suppression	In emission factor
Screen S-3 into Conveyor C-21	C-21	C-43	4.5%	Water-based Wet Suppression	In emission factor
Screen S-4 into Conveyor C-22	C-22	C-29	4.5%	Water-based Wet Suppression	In emission factor
Conveyor C-21 into Conveyor C-23	C-23	C-17	4.5%	Water-based Wet Suppression	90%
Conveyor C-22 into Conveyor C-23			4.5%	Water-based Wet Suppression	90%
Conveyor C-23 into Conveyor C-24	C-24	C-48	9%	Water-based Wet Suppression	90%
Conveyor C-24 into Product Pile 4	Product Pile 4	N/A	9%	Upstream Water-based Wet Suppression	90%
Product Pile 4 Loadout			9%	Water-based Wet Suppression	90%
Cotton Field Primary and Overland					
Excavation of Cotton Field Pit	N/A	N/A	100%	Water-based Wet Suppression	90%
Loader Feed to Grizzly F-2	F-2	F-2	100%	Water-based Wet Suppression	90%
Grizzly F-2				Water-based Wet Suppression	90%
Crusher CR-2	CR-2	CR-3	27%	Water-based Wet Suppression	In emission factor
Grizzly F-2 into Conveyor C-30	C-30	N/A (existing)	73%	Upstream Water-based Wet Suppression	90%
Crusher CR-2 into Conveyor C-30			27%	Water-based Wet Suppression	90%
Conveyor C-30 into Conveyor C-31	C-31	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-31 to into Conveyor C-32	C-32	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-32 into Screen S-5	Screen S-5	Portable Screen	100%	Water-based Wet Suppression	In emission factor
Screen S-5			100%	Water-based Wet Suppression	In emission factor
Screen S-5 into Conveyor C-33	C-33	N/A (existing)	65%	Water-based Wet Suppression	In emission factor
Screen S-5 into Conveyor C-35	C-35	N/A (existing)	100%	Water-based Wet Suppression	In emission factor
Conveyor C-33 to Crusher CR-3	CR-3	Portable Crusher	64%	Water-based Wet Suppression	90%
Crusher CR-3			64%	Water-based Wet Suppression	In emission factor
Crusher CR-3 to Conveyor C-34	C-34	N/A (existing)	64%	Water-based Wet Suppression	90%
Conveyor C-34 into Screen S-5	S-5	Portable Screen	64%	Water-based Wet Suppression	In emission factor
Conveyor C-35 into Conveyor C-36	C-36	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-36 Conveyor C-37	C-37	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-37 Conveyor C-38	C-38	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-38 to Conveyor C-39	C-39	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-39 to Conveyor C-40	C-40	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-40 to Conveyor C-41	C-41	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-41 to Conveyor C-42	C-42	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-42 to Conveyor C-43	C-43	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-43 to Conveyor C-44	C-44	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-44 to Conveyor C-74	C-74	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-74 into Cotton Field Aggregate Storage Pile	Aggregate Storage Pile	N/A	100%	Water-based Wet Suppression	90%
Aggregate Storage Pile Loadout			100%	Water-based Wet Suppression	90%

[1] Emission sources associated with the existing Twin Peaks Rock and Aggregate Plant operational configuration were identified in the 6/4/2025 process flow diagram (PFD) provided by CalPortland.

[2] Field equipment ID information and percentage of material processed in each equipment unit provided by CalPortland on 5/19/2025

[3] Control efficiency for water-based wet suppression control was obtained from the historical value approved by ADEQ in Permit No. 85424. This type of control may include various application methods including but not limited to water sprays, water jets, and foggers. Control efficiency based on upstream watering was obtained from the Facility's PTE workbooks provided by ADEQ on 8/21/2024.

Table 1-a3. Inputs - Twin Peaks Rock and Stone Plant and Cotton Field Primary and Overland - Existing Piles

Description [1]	Annual Average Surface Area Historical Size (ft^2)	Annual Average Surface Area [2] Historical Size (acres)
1/2" Screen Fill Pile	163,383	3.75
Product Pile 1	36,605	0.84
Product Pile 2	120,295	2.76
Product Pile 3	120,568	2.77
Product Pile 4	204,823	2.32
Limestone Stockpile	44,856	1.03
Cotton Field Aggregate Storage Pile	239,581	5.50

[1] Pile information for the existing Twin Peaks Rock and Aggregate Plant provided by CalPortland on 5/19/2025. Cotton Field Feed aggregate storage pile size data as provided by

[2] Pile size information for piles being retained as part of this application was provided by CalPortland on 5/19/2025. All other pile size data was obtained from the Facility's PTE workbooks

Table 1-a4. Inputs - Twin Peaks Rock and Stone Plant and Cotton Field Primary and Overland - Existing Paved and Unpaved Roads

Description [1]	Paved/Unpaved [1]	Vehicle Type [1]	Vehicle Weight (tons) [2,3]			Trip Distance (Round) [1]	Vehicle Miles Traveled (VMT) [4]
			Loaded	Unloaded	Average	(miles/round trip)	(VMT/yr)
Twin Peaks Rock and Stone Aggregate Plant							
Loader Transfer from Twin Peaks Aggregate Plant Feed Stockpile to Hopper 1	Unpaved	Caterpillar 988 Front End Loader	71.29	56.29	63.79	0.04	1,988.39
Loader Transfer from Aggregate Plant Finished Stockpiles to Customer Trucks	Unpaved	Caterpillar 982 XE Front End Loader	51.13	39.13	45.13	0.01	745.65
Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant	Unpaved	Customer Truck	40.00	16.50	28.25	0.57	19,342.36
Cotton Field Primary and Overland							
Loader Travel from Equipment Parking to Pit	Unpaved	Caterpillar 988 Front End Loader	-	56.29	56.29	1.44	524.74
Loader Transfer from Cotton Field Pit Face to Grizzly F-2	Unpaved	Caterpillar 988 Front End Loader	71.29	56.29	63.79	0.19	10,074.50

[1] Road travel and vehicle information provided by CalPortland on 7/16/2025 and 8/6/2025 for the Twin Peaks Cotton Feed operations. The process operates up to 7 days per week as noted by CalPortland on 8/22/2025.

[2] Front loader unloaded weight information was obtained online based on make and model numbers provided by CalPortland:

Vehicle Make/Model	Unloaded Weight (tons)	
Caterpillar 988	56.29	https://www.cat.com/en_US/products/new/equipment/wheel-loaders/large-wheel-loaders/123180.html
Caterpillar 982 XE	39.13	https://www.cat.com/en_US/products/new/equipment/wheel-loaders/medium-wheel-loaders/124970.html
Customer Trucks	16.50	Unloaded weight of customer trucks provided by CalPortland on 8/4/2025.

[3] Front loader bucket and customer truck payload provided by CalPortland on 8/6/2025 and 8/4/2025 respectively:

Vehicle Make/Model	Payload (tons)
Caterpillar 988	15.00
Caterpillar 982 XE	12.00
Customer Trucks	23.50

[4] Annual vehicle miles traveled (VMT) was calculated by dividing plant annual throughput by front loader load size and multiplying the resulting trip number by front loader round trip distance.

Table 1-b1. Inputs - Twin Peaks Rock and Stone Plant and Cotton Field Primary and Overland Proposed Throughput

Maximum Throughput [1] (tpy)
Twin Peaks Rock and Stone Plant
1,100,000
Cotton Field Primary and Overland
1,100,000

[1] Proposed throughput increase per 7/16/2025 email from CalPortland.

Table 1-b2. Inputs - Twin Peaks Rock and Stone Plant and Cotton Field Primary and Overland - Proposed Material Transfers

Emission Source Description [1]	Proposed Updated Permit Equipment ID [2]	Current Permit Equipment ID	% of Material Processed [2]	Control Method [3]	% Control Efficiency [3]
Primary Crushing from Quarry					
Belt Conveyor B11-BC2 to Belt Conveyor B11-TS-BC1	B11-TS-BC1	B11-TS-BC1	100%	Water-based Wet Suppression	90%
Belt Conveyor B11-TS-BC1 to Belt Conveyor B11-TS-BC2	B11-TS-BC2	B11-TS-BC2	100%	Upstream Water-based Wet Suppression	90%
Belt Conveyor B11-TS-BC2 to the Aggregate Plant Feed Stockpile	Aggregate Plant Feed Stockpile	N/A	100%	Upstream Water-based Wet Suppression	90%
Aggregate Plant Feed Stockpile Loadout			100%	Water-based Wet Suppression	90%
Twin Peaks Rock and Stone Plant					
Loader Transfer into Hopper 1	Hopper 1	Hopper 1	100%	Water-based Wet Suppression	90%
Hopper 1 into Conveyor C-1	C-1	C-4	100%	Upstream Water-based Wet Suppressio	90%
Conveyor C-1 into Conveyor C-2	C-2	C-5	100%	Water-based Wet Suppression	90%
Conveyor C-2 into Blade Mill BM-2	BM-2	N/A (New)	100%	Water-based Wet Suppression	90%
Blade Mill BM-2				Inherent, Water Saturation	100%
Blade Mill BM-2 into Screen S-1	Screen S-1 (portable screen will be physically replaced by a new screen)	Portable Screen	100%	Inherent, Water Saturation	100%
Screen S-1			100%	Inherent, Water Saturation	100%
Screen S-1 into Conveyor C-4	-	-	-	-	-
Screen S-1 into Conveyor C-5	-	-	-	-	-
Screen S-1 into Conveyor C-9	C-9	C-46	62%	Inherent, Water Saturation	100%
Screen S-1 into Conveyor C-68	C-68	N/A (New)	20%	Inherent, Water Saturation	100%
Conveyor C-68 into Conveyor C-10	C-10	C-31	20%	Inherent , Wet Material	90%
Screen S-1 into Fine Material Washer FM-5	FM-5	N/A (New)	19%	Inherent, Water Saturation	100%
Fine Material Washer FM-5 into Dewatering Screen DWS-4	DWS-4	N/A (New)	19%	Inherent, Water Saturation	100%
Dewatering Screen DWS-4				Inherent, Water Saturation	100%
Dewatering Screen DWS-4 into Splitter 3	Splitter 3	N/A (new)	19%	Inherent, Wet Material	In emission factor
Splitter 3 into Conveyor C-4	C-4	Portable Belt Conveyor	9%	Inherent, Wet Material	In emission factor
Splitter 3 into Conveyor C-3	C-3	C-26	10%	Inherent, Wet Material	In emission factor
Conveyor C-4 into Conveyor C-3	-	-	-	-	-
Conveyor C-3 into Conveyor C-13	C-13	C-16	10%	Water-based Wet Suppression	90%
Conveyor C-13 into Washed MA Fines Stockpile	Washed MA Fines Stockpile	N/A	10%	Inherent, Wet Material	In emission factor
Washed MA Fines Stockpile Loadout			10%	Water-based Wet Suppression	90%
Conveyor C-9 into Conveyor C-5	C-5	C-7	62%	Upstream Water-based Wet Suppression	90%
Conveyor C-5 into Crusher CR-1	CR-1	Portable Crusher	54%	TP-DC1 Baghouse	Emissions Routed to TP-DC1
Crusher CR-1			54%	TP-DC1 Baghouse	Emissions Routed to TP-DC1
Crusher CR-1 to Conveyor C-6	C-6	C-6	54%	TP-DC1 Baghouse	Emissions Routed to TP-DC1
Conveyor C-6 into Conveyor C-7	C-7	C-33	54%	Water-based Wet Suppression	90%
Conveyor C-7 into Screen S-2	S-2	S-6	54%	Water-based Wet Suppression	In emission factor
Screen S-2			54%	Water-based Wet Suppression	In emission factor
Screen S-2 into Conveyor C-11	C-11	C-35	10%	Water-based Wet Suppression	In emission factor
Conveyor C-11 into Conveyor C-5	C-5	C-7	10%	Water-based Wet Suppression	90%
Screen S-2 into Conveyor C-8	C-8	C-6	50%	Water-based Wet Suppression	0%
Conveyor C-8 into Conveyor C-10	C-10	C-31	53%	Water-based Wet Suppression	90%
Conveyor C-9 into Conveyor C-10		-	-	-	-
Conveyor C-4 into Conveyor C-10		C-31	9%	Water-based Wet Suppression	90%
Conveyor C-10 into Splitter 1	Splitter 1	N/A (existing)	53%	Water-based Wet Suppression	90%
Splitter 1 into Conveyor C-12	C-12	C-32	42%	Water-based Wet Suppression	90%
Twin Peaks Lime Silo	AGG-LS1	AGG-LS1	10%	Upstream Water-based Wet Suppression	90%
Splitter 1 into Conveyor C-14	C-14	N/A	11%	Upstream Water-based Wet Suppression	90%
Lime Silo into Conveyor C-14			21%	Water-based Wet Suppression	90%
Conveyor C-14 into Conveyor C-15	C-15	N/A (existing)	21%	Water-based Wet Suppression	90%
Conveyor C-15 into Conveyor C-26	C-26	N/A (existing)	21%	Water-based Wet Suppression	90%
Conveyor C-26 into Limestone Stockpile	PAG Base Material Pile	N/A	21%	Upstream Water-based Wet Suppression	90%
Limestone Stockpile Loadout			21%	Water-based Wet Suppression	90%
Loader into Hopper 2	Hopper 2	Hopper 2	4%	Water-based Wet Suppression	90%
Hopper 2 into Conveyor C-29	C-29	N/A (existing)	4%	Water-based Wet Suppression	90%
Conveyor C-29 into Conveyor C-14	C-14	N/A (existing)	4%	Water-based Wet Suppression	90%
Conveyor C-12 into Conveyor C-25	C-25	C-10	42%	Water-based Wet Suppression	90%
Conveyor C-25 into Splitter 2	Splitter 2	N/A (existing)	42%	Water-based Wet Suppression	90%
Splitter 2 into Screen S-3	S-3	S-11	21%	Water-based Wet Suppression	In emission factor
Screen S-3			21%	Water-based Wet Suppression	In emission factor
Splitter 2 into Screen S-4	S-4	S-12	21%	Water-based Wet Suppression	In emission factor
Screen S-4			21%	Water-based Wet Suppression	In emission factor
Screen S-3 into Conveyor C-17 (3/8")	C-17	C-12	1%	Water-based Wet Suppression	In emission factor
Screen S-3 into Conveyor C-18 (3/16")	C-18	C-27	5%	Water-based Wet Suppression	In emission factor
Screen S-3 into Conveyor C-27 (3/4")	C-27	C-11	9%	Water-based Wet Suppression	In emission factor
Conveyor C-27 into Conveyor C-28	Conveyor C-28	C-30	2%	Water-based Wet Suppression	90%
Conveyor C-28 into Conveyor C-11	C-11	C-35	2%	Water-based Wet Suppression	90%
Conveyor C-27 into Conveyor C-16	Conveyor C-16	C-15	2%	Water-based Wet Suppression	90%

Conveyor C-16 into Product Pile 3	Product Pile 3	N/A	2%	Upstream Water-based Wet Suppression	90%
Product Pile 3 Loadout			2%	Water-based Wet Suppression	90%
Conveyor C-17 into Conveyor C-20	C-20	C-34	13%	Water-based Wet Suppression	90%
Conveyor C-20 into Product Pile 1	Product Pile 1	N/A	13%	Upstream Water-based Wet Suppression	90%
Product Pile 1 Loadout			13%	Water-based Wet Suppression	90%
Conveyor C-18 into Conveyor C-19	C-19	N/A (existing)	8%	Water-based Wet Suppression	90%
Conveyor C-19 into Product Pile 2	Product Pile 2	N/A	8%	Upstream Water-based Wet Suppression	90%
Product Pile 2 Loadout			8%	Water-based Wet Suppression	90%
Screen S-4 into Conveyor C-17 (3/8")	C-17	C-12	1%	Water-based Wet Suppression	In emission factor
Screen S-4 into Conveyor C-18 (3/16")	C-18	C-27	5%	Water-based Wet Suppression	In emission factor
Screen S-4 into Conveyor C-27 (3/4")	C-27	C-11	9%	Water-based Wet Suppression	In emission factor
Screen S-3 into Conveyor C-21	C-21	C-43	4.5%	Water-based Wet Suppression	In emission factor
Screen S-4 into Conveyor C-22	C-22	C-29	4.5%	Water-based Wet Suppression	In emission factor
Conveyor C-21 into Conveyor C-23	C-23	C-17	4.5%	Water-based Wet Suppression	90%
Conveyor C-22 into Conveyor C-23			4.5%	Water-based Wet Suppression	90%
Conveyor C-23 into Conveyor C-24	C-24	C-48	9%	Water-based Wet Suppression	90%
Conveyor C-24 into Product Pile 4	Product Pile 4	Product Pile 4	9%	Upstream Water-based Wet Suppression	90%
Product Pile 4 Loadout			9%	Water-based Wet Suppression	90%
Cotton Field Primary and Overland					
Excavation of Cotton Field Pit	N/A	N/A	100%	Water-based Wet Suppression	90%
Loader Feed to Grizzly F-2	F-2	F-2	100%	Water-based Wet Suppression	90%
Grizzly F-2				Water-based Wet Suppression	90%
Crusher CR-2	CR-2	CR-3	27%	Water-based Wet Suppression	In emission factor
Grizzly F-2 into Conveyor C-30	C-30	N/A (existing)	73%	Upstream Water-based Wet Suppression	90%
Crusher CR-2 into Conveyor C-30			27%	Water-based Wet Suppression	90%
Conveyor C-30 into Conveyor C-31	C-31	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-31 to into Conveyor C-32	C-32	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-32 into Screen S-5	Screen S-5	Portable Screen	100%	Water-based Wet Suppression	In emission factor
Screen S-5			100%	Water-based Wet Suppression	In emission factor
Screen S-5 into Conveyor C-33	C-33	N/A (existing)	65%	Water-based Wet Suppression	In emission factor
Screen S-5 into Conveyor C-35	C-35	N/A (existing)	100%	Water-based Wet Suppression	In emission factor
Conveyor C-33 to Crusher CR-3	CR-3	Portable Crusher	64%	Water-based Wet Suppression	90%
Crusher CR-3			64%	Water-based Wet Suppression	In emission factor
Crusher CR-3 to Conveyor C-34	C-34	N/A (existing)	64%	Water-based Wet Suppression	90%
Conveyor C-34 into Screen S-5	S-5	Portable Screen	64%	Water-based Wet Suppression	In emission factor
Conveyor C-35 into Conveyor C-36	C-36	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-36 Conveyor C-37	C-37	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-37 Conveyor C-38	C-38	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-38 to Conveyor C-39	C-39	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-39 to Conveyor C-40	C-40	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-40 to Conveyor C-41	C-41	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-41 to Conveyor C-42	C-42	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-42 to Conveyor C-43	C-43	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-43 to Conveyor C-44	C-44	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-44 to Conveyor C-74	C-74	N/A (existing)	100%	Water-based Wet Suppression	90%
Conveyor C-74 into Sand and Gravel Plant Feed Stockpile	Sand and Gravel Plant Feed Stockpile	N/A	100%	Water-based Wet Suppression	90%

[1] Emission sources and proposed changes associated with the Twin Peaks Rock and Aggregate Plant were identified in the 7/8/2025 process flow diagram (PFD) provided by CalPortland.

[2] Field equipment ID information and percentage of material processed in each equipment unit provided by CalPortland on 5/19/2025

[3] Control efficiency for water-based wet suppression control was obtained from the historical value approved by ADEQ in Permit No. 85424. This type of control may include various application methods including but not limited to water sprays, water jets, and foggers. Control efficiency based on upstream watering was obtained from the Facility's PTE workbooks provided by

Table 1-b3. Inputs - Twin Peaks Rock and Stone Plant and Cotton Field Primary and Overland - Piles

Description [1]	Annual Average Surface Area [1] Production Increase Size (ft^2)	Annual Average Surface Area Production Increase Size (acres)	Annual Average Surface Area Historical Size (ft^2)	Annual Average Surface Area Historical Size (acres)
1/2" Screen Fill Pile	163,383	3.75	261,975	6.01
Product Pile 1	50,045	1.15	36,605	0.84
Product Pile 2	47,112	1.08	120,295	2.76
Product Pile 3	5,314	0.12	120,568	2.77
Product Pile 4	247,364	5.7	204,823	2.32
Limestone Stockpile	43,560	1.0	44,856	1.030
Washed MA Fines Pile	43,560	1.0		
Cotton Field Aggregate Storage Pile	236,891	5.44	239,581	5.50

[1] Emission sources and proposed changes associated with the Twin Peaks Rock and Aggregate Plant were identified in the 7/16/2025 process flow diagram (PFD) provided by CalPortland. Sand and Gravel Feed Pile size provided by CalPortland on 7/15/2025.

Table 1-b4. Inputs - Twin Peaks Rock and Stone Plant and Cotton Field Primary and Overland - Paved and Unpaved Roads

Description [1]	Paved/Unpaved [1]	Vehicle Type [1]	Vehicle Weight (tons) [2,3]			Trip Distance (Round) [1]	Vehicle Miles Traveled (VMT) [4]
			Loaded	Unloaded	Average	(miles/round trip)	(VMT/yr)
Twin Peaks Rock and Stone Aggregate Plant							
Loader Transfer from Aggregate Plant Feed Stockpile to Hopper 1	Unpaved	Caterpillar 988 Front End Loader	71.29	56.29	63.79	0.04	2,734.03
Loader Transfer from Aggregate Plant Finished Stockpiles to Customer Trucks	Unpaved	Caterpillar 982 XE Front End Loader	51.13	39.13	45.13	0.01	1,025.26
Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant - Segment 1	Paved	Customer Truck	40.00	16.50	28.25	0.38	17,730.50
Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant - Segment 2	Unpaved	Customer Truck	40.00	16.50	28.25	0.19	8,865.25
Cotton Field Primary and Overland							
Loader Travel from Equipment Parking to Pit	Unpaved	Caterpillar 988 Front End Loader	-	56.29	56.29	1.44	524.74
Loader Transfer from Cotton Field Pit Face to Grizzly F-2	Unpaved	Caterpillar 988 Front End Loader	71.29	56.29	63.79	0.11	8,333.33

[1] Road travel and vehicle information provided by CalPortland on 7/16/2025 and 8/6/2025 for the Twin Peaks Cotton Feed operations. The process operates up to 7 days per week as noted by CalPortland on 8/22/2025.

[2] Front loader unloaded weight information was obtained online based on make and model numbers provided by CalPortland:

Vehicle Make/Model	Unloaded Weight (tons)	
Caterpillar 988	56.29	https://www.cat.com/en_US/products/new/equipment/wheel-loaders/large-wheel-loaders/123180.html
Caterpillar 982 XE	39.13	https://www.cat.com/en_US/products/new/equipment/wheel-loaders/medium-wheel-loaders/124970.html
Customer Trucks	16.50	Unloaded weight of customer trucks provided by CalPortland on 8/4/2025.

[3] Front loader bucket and customer truck payload provided by CalPortland on 8/6/2025 and 8/4/2025 respectively:

Vehicle Make/Model	Payload (tons)
Caterpillar 988	15.00
Caterpillar 982 XE	12.00
Customer Trucks	23.50

[4] Annual vehicle miles traveled (VMT) was calculated by dividing plant annual throughput by front loader load size and multiplying the resulting trip number by front loader round trip distance.

Table 1c-1. New Sources - Production Values

Source Location	Production Capacity [1] (tpy)
Manufactured Fines Plant	400,000
Aggregate Wash Plant	1,500,000

[1] Proposed throughput information provided by CalPortland on 7/16/2025.

Table 1c-2. New Sources - Wash Plant Storage Piles - Sources and Parameters

Source Location [1]	Pile ID	Unit Description [1]	Pile Area (ft^2) [1,3]	Pile Area (acres)	Material [1]	Silt Content [3,4] (%)
Manufactured Fines Plant	TBD	MA Fines Material Pile	43,560	1.00	Manufactured Fines	2.6
Wash Plant	TBD	ASTM #4 Washed Concrete Aggregate	21,780.00	0.50	Washed Aggregate	2.6
	TBD	ASTM #57 Washed Concrete Aggregate	43,560.00	1.00	Washed Aggregate	2.6
	TBD	ASTM #8 Washed Concrete Aggregate	21,780.00	0.50	Washed Aggregate	2.6
	TBD	Birdseye Material Pile	43,560	1.00	Washed Aggregate	2.6
	TBD	ASTM C33 Concrete Sand	43,560.00	1.00	Sand	2.6
	TBD	Washed Mortar Sand	21,780.00	0.50	Sand	2.6
	TBD	Washed Fine Sand	10,890.00	0.25	Sand	2.6

[1] New wash plant pile information per 5/19/2025 email.

[2] MA Fines Material Pile and Birdseye Material Pile sizes confirmed by CalPortland confirmed in 7/29/2025 email to Trinity.

[3] Silt content for sand obtained from AP-42 Section 13.2.4 Table 13.2.4-1.

[4] ASTM #4, #57, and #8 are washed aggregate standards with very low silt content per CalPortland on 8/6/2025. Silt content for these washed aggregate grades was conservatively assumed to be equal to that of the silt content from sand in AP-42 Section 13.2.4 Table 13.2.4-1.

Table 1c-3. New Sources - Road Travel - Sources and Parameters

Description [1]	Paved/Unpaved [1]	Vehicle Type [1]	Vehicle Weight (tons) [2,3]			Trip Distance (Round) [1]	Vehicle Miles Traveled (VMT) [4,5,6,7,8]
			Loaded	Unloaded	Average	(miles/round trip)	(VMT/yr)
Manufactured Fines Plant							
Loader Transfer from MA Fines Plant Feed to Hopper 4	Unpaved	Caterpillar 988 Front End Loader	71.29	56.29	63.79	0.19	5,050.51
Wash Plant							
Loader Transfer from Feed Piles to Hopper 5	Unpaved	Caterpillar 988 Front End Loader	71.29	56.29	63.79	0.09	473.48
Loader from Wash Plant Stockpiles to Customer Trucks	Unpaved	Caterpillar 982 XE Front End Loader	51.13	39.13	45.13	0.01	820.2
Loader from Wash Plant Stockpiles to Secondary Stockpiles	Unpaved	Caterpillar 982 XE Front End Loader	51.13	39.13	45.13	0.19	6,753.06
Customer Truck Travel to and from the Wash Plant - Segment 1	Paved	Customer Truck	40.00	16.50	28.25	0.38	14,184.40
Customer Truck Travel to and from the Wash Plant - Segment 2	Unpaved	Customer Truck	40.00	16.50	28.25	0.19	7,092.20

[1] Road travel and vehicle information provided by CalPortland on 8/6/2025 and 8/11/2025 for the Manufactured Fines Plant and Wash Plant operations. The processes operate up to 7 days per week as noted by CalPortland on 8/22/2025.

[2] Front loader unloaded weight information was obtained online based on make and model numbers provided by CalPortland:

Vehicle Make/Model	Unloaded Weight (tons)	
Caterpillar 988	56.29	https://www.cat.com/en_US/products/new/equipment/wheel-loaders/large-wheel-loaders/123180.html
Caterpillar 982 XE	39.13	https://www.cat.com/en_US/products/new/equipment/wheel-loaders/medium-wheel-loaders/124970.html
Customer Trucks	16.50	Unloaded weight of customer trucks provided by CalPortland on 8/4/2025.

[3] Front loader bucket and customer truck payload provided by CalPortland on 8/6/2025 and 8/4/2025 respectively:

Vehicle Make/Model	Payload (tons)
Caterpillar 988	15.00
Caterpillar 982 XE	12.00
Customer Trucks	23.50

[4] Annual vehicle miles traveled (VMT) was calculated by dividing plant annual throughput by front loader load size and multiplying the resulting trip number by front loader round trip distance.

[5] Wash Plant product sales of 1100000 tpy provided on 8/5/2025 by CalPortland.

[6] Weight of Wash Plant feed provided by front end loader equal to 75,000 tpy provided on by CalPortland on 8/12/2025 call.

[7] Percent of Wash Plant product stockpiled up to 39% of the plant's operating time conservatively, per CalPortland 3/26/2026.

[8] Percent of Wash Plant product loaded to customer trucks up to 80% of the plant's operating time conservatively, to accommodate the stockpiling assumption from CalPortland on 3/26/2026.

Table 1c-4. New Manufactured Fines Plant - Transfer Sources and Parameters

Emission Source Description [1]	Proposed Updated Permit ID	Current Permit ID	% of Material Processed [2]	Control Method [3]	% Control Efficiency [3]
Loader to Hopper 4	Hopper 4	N/A (new)	100%	Water-based Wet Suppression	90%
Hopper 4 to Conveyor C-45	C-45	C-45	100%	Water-based Wet Suppression	90%
Conveyor C-45 to Crusher CR-4	CR-4	Portable Crusher	100%	TP-DC1 Baghouse	Emissions Routed to Baghouse
Crusher CR-4			100%	TP-DC1 Baghouse	Emissions Routed to Baghouse
Crusher CR-4 to Conveyor C-46	C-46	N/A (existing)	100%	TP-DC1 Baghouse	Emissions Routed to Baghouse
Conveyor C-46 to Screen S-6	S-6	Portable Screen	100%	Water-based Wet Suppression	In emission factor
Screen S-6			100%	Water-based Wet Suppression	In emission factor
Screen S-6 into conveyor C-70	C-70	N/A (new)	90%	Water-based Wet Suppression	In emission factor
Conveyor C-70 to Conveyor C-69	C-69	N/A (new)	90%	Water-based Wet Suppression	90%
Conveyor C-69 to Conveyor C-45	C-45	N/A (new)	90%	Water-based Wet Suppression	90%
Screen S-6 to Conveyor C-71	C-71	N/A (new)	100%	Upstream Water-based Wet Suppression	90%
Conveyor C-71 to Conveyor C-72	C-72	N/A (new)	100%	Water-based Wet Suppression	90%
Conveyor C-72 to Conveyor C-73	C-73	N/A (new)	100%	Water-based Wet Suppression	90%
Conveyor C-73 into MA Fines Material Pile	MA Fines Material Pile	N/A (new)	100%	Upstream Water-based Wet Suppression	90%

[1] Emission sources per PFD provided by CalPortland on 7/16/2025.

[2] Percentage of the throughput associated with each emission source per spreadsheet from CalPortland dated 7/16/2025.

[3] Control efficiency for water-based wet suppression control was obtained from the historical value approved by ADEQ in Permit No. 85424. This type of control may include various application methods including but not limited to water sprays, water jets, and foggers. Control efficiency based on upstream watering was obtained from the Facility's PTE workbooks provided by ADEQ on 8/21/2024.

Table 1c-5. New Wash Plant- Transfer Sources and Parameters

Emission Source Description [1]	Proposed Updated Permit ID	Current Permit ID	% of Material Processed [2]	Control Method [3]	% Control Efficiency [3]
Sand and Gravel Plant and MA Fines Material Pile 2 Feed into Wash Plant Tunnel Conveyor	Wash Plant Feed Tunnel Conveyor	N/A (new)	95%	Tunnel/Under-pile Conveyor	80%
Wash Plant Feed Tunnel Conveyor into Conveyor C-47	Wash Plant Feed Tunnel Conveyor	N/A (new)	95%	Water-based Wet Suppression	90%
Loader into Hopper 5	Hopper 5	N/A (new)	5%	Water-based Wet Suppression	90%
Hopper 5 into Conveyor C-66	C-67	N/A (new)	5%	Water-based Wet Suppression	90%
Conveyor C-66 into Conveyor C-67	C-47	N/A (new)	5%	Water-based Wet Suppression	90%
Conveyor C-67 into Conveyor C-47	C-47	N/A (new)	5%	Water-based Wet Suppression	90%
Conveyor C-47 into Conveyor C-48	C-48	N/A (new)	100%	Water-based Wet Suppression	90%
Conveyor C-48 into Blade Mill BM-1	BM-1	N/A (new)	100%	Water-based Wet Suppression	90%
Blade Mill BM-1 into Screen S-7	S-7	N/A (new)	100%	Inherent, Water Saturation	100%
Screen S-7		N/A (new)	100%	Inherent, Water Saturation	100%
Screen S-7 into Conveyor C-49 (1")	C-49	N/A (new)	5%	Inherent, Water Saturation	100%
Conveyor C-49 into Conveyor C-50	C-50	N/A (new)	5%	Inherent, Water Saturation	100%
Conveyor C-50 into ASTM #4 Rock Material Pile	ASTM #4 Rock Material Pile	N/A (new)	5%	Inherent, Water Saturation	100%
ASTM #4 Rock Material Pile Loadout		N/A (new)	5%	Inherent, Wet Material	90%
Screen S-7 into Conveyor C-51 (3/8" and 3/16")	C-51	N/A (new)	55%	Inherent, Water Saturation	100%
Conveyor C-51 into Coarse Material Washer CMW-1	CMW-1	N/A (new)	55%	Inherent, Water Saturation	100%
Coarse Material Washer CMW-1 into Screen S-8	S-8	N/A (new)	55%	Inherent, Water Saturation	100%
Screen S-8		N/A (new)	55%	Inherent, Water Saturation	100%
Screen S-8 into Conveyor C-52 (3/8")	C-52	N/A (new)	34%	Inherent, Water Saturation	100%
Conveyor C-52 into Conveyor C-53	C-53	N/A (new)	34%	Inherent, Water Saturation	100%
Conveyor C-53 into #57 Pile	#57 Pile	N/A (new)	34%	Inherent, Water Saturation	100%
#57 Pile Loadout			34%	Inherent , Wet Material	90%
Screen S-8 into Conveyor C-54 (1/4")	C-54	N/A (new)	10%	Inherent, Water Saturation	100%
Conveyor C-54 into Conveyor C-55	C-55	N/A (new)	10%	Inherent, Water Saturation	100%
Conveyor C-55 into ASTM #8 Rock Material Pile	ASTM # 8 Rock Material Pile	N/A (new)	10%	Inherent, Water Saturation	100%
ASTM #8 Rock Material Pile Loadout			10%	Inherent , Wet Material	90%
Screen S-8 into Conveyor C-56 (1/8")	C-56	N/A (new)	2%	Inherent, Water Saturation	100%
Conveyor C-56 into Conveyor C-57	C-57	N/A (new)	2%	Inherent, Water Saturation	100%
Conveyor C-57 into Washed 1/4" Material Pile	Washed 1/4" Material Pile	N/A (new)	2%	Inherent, Water Saturation	100%
Washed 1/4" Material Pile Loadout			2%	Inherent, Wet Material	90%
Screen S-8 into Fine Material Washer FM-1	FM-1	N/A (new)	2%	Inherent, Water Saturation	100%
Fine Material Washer FM-1 into Conveyor C-58	C-58	N/A (new)	2%	Inherent, Water Saturation	100%
Conveyor C-58 into Conveyor C-59	C-59	N/A (new)	2%	Inherent, Water Saturation	100%
Conveyor C-59 into Birdseye Material Pile	Birdseye Material Pile	N/A (new)	2%	Inherent, Water Saturation	100%
Birdseye Material Pile Loadout			2%	Inherent, Wet Material	90%
Screen S-7 Underflow into Classifying Tank	Classifying Tank	N/A (new)	40%	Inherent, Water Saturation	100%
Classifying Tank Underflow into Fine Material Washer FM-2	FM-2	N/A (new)	1%	Inherent, Water Saturation	100%
Classifying Tank Overflow into High Rate Thickener HRT-60	HRT-60	N/A (new)	1%	Inherent, Water Saturation	100%
High Rate Thickener HRT-60 Underflow into Pile	Thickener Underflow Pile	N/A (new)	1%	Inherent, Water Saturation	100%
Fine Material Washer FM-2 into Dewatering Screen DWS-1	DWS-1	N/A (new)	1%	Inherent, Water Saturation	100%
Dewatering Screen DWS-1 into Conveyor C-60	C-60	N/A (new)	1%	Inherent, Wet Material	In emission factor
Conveyor C-60 into Conveyor C-61	C-61	N/A (new)	1%	Inherent, Wet Material	In emission factor
Conveyor C-61 into Washed Fine Sand Material Pile	Washed Fine Sand Material Pile	N/A (new)	1%	Inherent, Wet Material	In emission factor
Washed Fine Sand Material Pile Loadout			1%	Inherent, Wet Material	In emission factor
Classifying Tank Underflow into Fine Material Washer FM-3	FM-3	N/A (new)	10%	Inherent, Water Saturation	100%
Fine Material Washer FM-3 into Dewatering Screen DWS-2	DWS-2	N/A (new)	10%	Inherent, Water Saturation	100%
Dewatering Screen DWS-2 into Conveyor C-62	C-62	N/A (new)	10%	Inherent, Wet Material	In emission factor
Conveyor C-62 into Conveyor C-63	C-63	N/A (new)	10%	Inherent, Wet Material	In emission factor
Conveyor C-63 into Mortar Sand Material Pile	Mortar Sand Material Pile	N/A (new)	10%	Inherent, Wet Material	In emission factor
Mortar Sand Material Pile Loadout			10%	Inherent, Wet Material	In emission factor
Classifying Tank Underflow into Fine Material Washer FM-4	FM-4	N/A (new)	28%	Inherent, Water Saturation	100%
Fine Material Washer FM-4 into Dewatering Screen DWS-3	DWS-3	N/A (new)	28%	Inherent, Water Saturation	100%
Dewatering Screen DWS-3 into Conveyor C-64	C-64	N/A (new)	28%	Inherent, Wet Material	In emission factor
Conveyor C-64 into Conveyor C-65	C-65	N/A (new)	28%	Inherent, Wet Material	In emission factor
Conveyor C-65 to Concrete Sand Material Pile	Concrete Sand Material Pile	N/A (new)	28%	Inherent, Wet Material	In emission factor
Concrete Sand Material Pile Loadout			28%	Inherent, Wet Material	In emission factor

[1] Emission sources per PFD provided by CalPortland on 6/4/2025.

[2] Percentage of the throughput associated with each emission source provided by CalPortland on 7/16/2025, as well as information provided by CalPortland on 8/12/2025 and 8/13/2025.

[3] Control efficiency for water-based wet suppression control was obtained from the historical value approved by ADEQ in Permit No. 85424. This type of control may include various application methods including but not limited to water sprays, water jets, and foggers. Control efficiency based on upstream watering was obtained from the Facility's PTE workbooks provided by ADEQ on 8/21/2024.

Table 1c-6. New Sources - D2 Clinker Bypass - Sources and Parameters

Emission Source Description [1]	Proposed Permit ID	Control Device	Control Device Maximum Outlet Grain Loading [2] (gr/dscf)	Flow rates [1] (cfm)	Internal Notes
H2-PF2-DG2 Triverter Gate Drop into Belt Conveyor H2-BC3	H2-PF2-DG2	H2-DC2 Baghouse	0.01	7500	Emissions accounted for under H2-DC2 Baghouse.
	H2-BC3				
Belt Conveyor H2-BC3 into Belt Conveyor C2-BC8	C2-BC8	H2-DC5 Baghouse	0.005	1800	Controlled by new baghouse.

[1] New emission sources per PFD provided by CalPortland on 8/22/2025 and new baghouse flowrate per CalPortland email on 5/12/2025.

[2] It is assumed the new baghouse will meet the proposed grain loading value.

Table 1e-1. New Sources - Concrete Batch Plant Production Values

Maximum Operating Schedule [1] (hours/day)	Maximum Operating Schedule [1] (days/week)	Maximum Operating Schedule [1] (weeks/year)	Production Capacity [1] (tph)	Production Capacity [1] (tpy)
12	6	52	150	561,600

[1] Concrete batch plant operational schedule and maximum hourly production information was provided by CalPortland on 5/9/2025 and 3/16/2026, respectively.

Table 1e-2. New Sources - Concrete Batch Plant - Product Composition

Mix Component [1]	Concrete Density (lbs/cubic yard) [1]	Composition of Mix (lbs) [1]	Composition of Mix (%)
Aggregate	4000	1600	40%
Sand		1450	36%
Cement and Cementitious Material Additives		611	15%
Water/Admix		339	8%

[1] Concrete batch plant concrete product composition information provided by CalPortland on 5/9/2025.

Table 1e-3. New Sources - Concrete Batch Plant - Sources and Parameters

Emission Source Description [1,2]	Material	Annual Throughput (tpy)	Control Description [1]	Control Efficiency [3]	Control Device Maximum Outlet Grain Loading [4] (gr/dscf)	Control Device Flow Rate [4] (cfm)	Internal Notes
BP-S-1 Loading	Cement	N/A	Silo Baghouse BP-BH-1	See Columns G and H	0.002	2,340	Vendor grain loading was very low so, per 3/16/2026 email, Trinity will use the 0.002 gr/dscf value.
BP-S-2 Loading	Flyash	N/A	Silo Baghouse BP-BH-2	See Columns G and H	0.002	2,340	
BP-S-3 Loading	Pozzolan	N/A	Silo Baghouse BP-BH-3	See Columns G and H	0.002	2,340	
BP-S-4 Super Silo Loading	Cement	N/A	Silo Baghouse BP-BH-4	See Columns G and H	0.002	2,340	
Horizontal Guppy Loading	Pozzolan	N/A	Dust Collector BP-DC-1	See Columns G and H	0.002	10,000	Vendor grain loading was very low so, per 3/16/2026 email, Trinity will use the 0.002 gr/dscf value.
Gravity Feeding from Silos into Cementitious Material Weigh Batcher	Silo Materials	N/A					
Material Transfer into Central Mixer	Ready Mix Concrete	561,600					
Transfer to Lightweight Rock Pile	Lightweight Rock	1,500	None	0%	-	-	
Lightweight Rock Pile Loadout	Lightweight Rock	1,500	Pile Watering	90%	-	-	
Sand Transfer from Loader Into Hopper H-1	Sand	203,580	Inherent, Wet Material	In Emission Factor	-	-	
Aggregate Transfer from Loader Into Hopper H-2	Aggregate	224,640	Inherent, Wet Material		-	-	
Aggregate Transfer from Loader Into Hopper H-3					-	-	
Aggregate Transfer from Loader Into Hopper H-4					-	-	
Aggregate Transfer into Overhead Aggregate Bin (4 Compartments)	Aggregate	224,640	Full Enclosure	100%	-	-	
Sand Transfer into Overhead Aggregate Bin (4 Compartments)	Sand	203,580	Full Enclosure	100%	-	-	
Sand Transfer into Aggregate Weigh Hopper (4 bins)	Sand	203,580	Inherent, Wet Material	In Emission Factor	-	-	
Aggregate Transfer into Aggregate Weigh Hopper (4 bins)	Aggregate	224,640	Inherent, Wet Material	In Emission Factor	-	-	

[1] Concrete batch plant (CBP) process and control equipment parameters provided by CalPortland on 5/9/2025, unless otherwise identified. The majority of aggregate and sand feed material will be sourced from the proposed Rillito wash plant.
[2] Except for the lightweight rock pile, the feed piles associated with the CBP are the proposed wash plant product piles.
[3] Control efficiencies are consistent with the most recent air quality permit renewal application approved by Class I Permit No. 85424 on March 3, 2021.
[4] Maximum outlet grain loading value confirmed on call with CalPortland on 2/19/2026.

Table 1e-5. New Sources - Storage Piles - Sources and Parameters

Pile Description [1]	Pile Area (ft^2) [1]	Pile Area (acres)	Material [1]	Silt Content [2] (%)	Control Measures	Control Efficiency [3] (%)
Lightweight Rock Pile	12,424.68	0.29	Lightweight Rock	2.60	Pile Watering	90%

[1] Pile information was provided by CalPortland on 2/25/2026.
[2] Silt content for sand obtained from AP-42 Section 13.2.4 Table 13.2.4-1.
[3] Control efficiency is consistent with the most recent air quality permit renewal application approved by Class I Permit No. 85424 on March 3, 2021.

Table 1e-6. New Sources - Vehicle Travel - Sources and Parameters

Description [1]	Paved/Unpaved [1]	Vehicle Type [1]	Vehicle Weight (tons) [2,3]			Trip Type [1]	Number of Vehicle Trips/ Segment/day [4]	Trip Distance (miles/vehicle/segment/day) [1]		Vehicle Miles Travelled (VMT) [5,6]
			Loaded	Unloaded	Average			(one-way)	(round-trip)	(VMT/yr)
Loader to and from Concrete Batch Plant Parking Area	Unpaved	Caterpillar 988 Front End Loader	-	56.29	56.29	Round	1	0.18	0.36	112.32
Loader Transfer from Feed Piles to Aggregate Hoppers	Unpaved	Caterpillar 988 Front End Loader	71.29	56.29	63.79	Round	N/A	0.09	0.19	5,406.82
Powder Train Travel Segment	Paved	Articulated Truck	40.00	16.50	28.25	Round	N/A	N/A	0.23	829.64
Mixer Truck to and from Concrete Batch Plant Entrance to Parking Area	Paved	Mixer Truck	-	20.00	20.00	Round	25	0.09	0.19	1,477.27
Mixer Truck Loading Travel Segment	Paved	Mixer Truck	40.00	20.00	30.00	Round	N/A	N/A	0.23	6,381.82

[1] Concrete batch plant loader travel information provided by CalPortland on 2/16/2026, 2/19/2026, 2/20/2026, and 3/26/2026. Powder train and concrete mixer truck travel information was provided by CalPortland on 2/25/2026.
[2] Front-end loader unloaded weight information per the Caterpillar 988 identified by CalPortland, accessed at: https://www.cat.com/en_US/products/new/equipment/wheel-loaders/large-wheel-loaders/123180.html
Front loader bucket payload provided by CalPortland on 3/26/2026.

Unloaded Weight (tons)	56.29
Payload (tons)	15.00

[3] Powder train and mixer truck weight information provided by CalPortland on 2/16/2026.
[4] Concrete batch plant loader and mixer truck parking area quantities were provided by CalPortland on 3/16/2026.
[5] Annual vehicle miles traveled (VMT) for front-end loader and mixer truck material transfer was calculated by dividing relevant annual throughput for the segment by vehicle load size and multiplying the resulting trip number by front loader round trip distance.
[6] Daily vehicle miles traveled (VMTs) for powder trains and parking travel segments calculated based on segment lengths and number of daily trips. Hourly and annual VMTs calculated based on the operational schedule provided by CalPortland (12 hours/day, 6 days/week, 52 weeks/yr).

Table 1d-1. Kiln 4 and Calciner Alternative Fuel Addition Values

Fuel	Heating Value (MMBtu/ton) [1]	Moisture Content (%) [2,3,4,5]
Wood/cardboard/paper	17.48	8
Biosolids	10.39	5.6
Yard waste/Ag. Byproducts	8.25	29.84
Dust Collector Bags	N/A	N/A

[1] Alternative fuel heating values from 40 CFR 98 Table C-1.

[2] Wood moisture obtained from https://www.woodproducts.fi/content/moisture-properties-wood

[3] Biosolids moisture obtained from https://www.mdpi.com/1996-1073/12/1/60/pdf

[4] Yard Waste/Ag Byproducts moisture obtained from https://www.researchgate.net/publication/268510596_Physical_and_chemical_characterization_of_yard_waste

[5] Dust collector bag moisture contents not included - fugitive emissions are not expected from dust collector bag material handling.

Table 2a-1. Facility-wide PTE Summary

Pollutant	Total Emissions (tpy)
Pre-Project PTE	
PM	2,362.11
PM_{10}	1,674.63
$PM_{2.5}$	598.56
CO	5,203.27
NO_x	5,218.02
SO_2	11,347.44
VOC	16.90
Lead	0.05
Max Single HAP (HCl)	101.78
HAPs	135.06
CO_2	250,051.28
CH_4	21.11
N2O	3.05
CO_2e [1]	251,449.73
Post-Project PTE	
PM	2,360.36
PM_{10}	1,677.12
$PM_{2.5}$	599.29
CO	5,203.27
NO_x	5,218.02
SO_2	11,347.44
VOC	16.90
Lead	0.05
Max Single HAP (HCl)	101.78
HAPs	135.06
CO_2	250,051.28
CH_4	21.11
N2O	3.05
CO_2e [1]	251,449.73

[1] CO_{2e} calculated with Global Warming Potentials (GWPs) obtained from Subpart A of 40 CFR 98, Table A–1 "Global Warming Potentials" (1/16/25).

CO_2	1
CH_4	28
N_2O	265

Table 2b-1. Project Emissions Increase

Description	Filterable PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
NSR Analysis							
Project Emissions Increase[1]	8.30	3.72	-0.40	0.00	0.00	0.00	0.00
Pollutant Attainment Status [2]	-	Moderate Nonattainment	Attainment	Attainment	Attainment	Attainment	Attainment
Significant Emission Rate (SER) [3]	25	15	10	40	40	100	40
50% of SERs [4]	12.5	7.5	5.0	20.0	20.0	50.0	20.0
Emission Increases Emissions > SER?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Emission Increases Emissions > 50% SER?	**No**	**No**	**No**	**No**	**No**	**No**	**No**

[1.] Project emissions increase is calculated as follows: PAE + PTE of New Emission Sources - BAE - CHA.
[2.] According to EPA Greenbook. https://www3.epa.gov/airquality/greenbook/ancl.html. Accessed 5/14/2025.
[3.] SER as defined in 40 CFR 52.21(b)(23)(i).
[4.] "Reasonable possibility" applicability determination as defined in A.A.C. R18-2-402.F(6).

Table 2b-2. Baseline Actual Emissions (BAE) of Existing Unit

Emission Source	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
Kiln 4	17.02	17.02	13.60	5.01	1,710.01	3,139.01	13.29
Twin Peaks Rock and Stone Plant	33.81	9.76	0.89				
Total	51	27	14	5	1,710.01	3,139.01	13

Table 2b-3. Projected Actual Emissions (PAE) of Existing Unit

Emission Source	Filterable PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
Kiln 4	18.70	18.70	14.81	5.72	1,814.91	3,331.57	14.10
Twin Peaks Rock and Stone Plant	26.53	9.70	1.24				
Total	45	28	16	6	1,814.91	3,331.57	14

Table 2b-4. Could Have Accommodated Emissions (CHA) of Existing Unit

Emission Source [1]	Filterable PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
Kiln 4	3.62	3.62	2.75	1.41	293.67	539.07	2.52
Twin Peaks Rock and Stone Plant	5.04	1.71	0.43				
Total	9	5	3	1	294	539	3

[1.] Based on A.A.C. R18-2-401.23(b)(iv).

Table 2b-5. Potential to Emit (PTE) from New Project Sources

Emission Source [1]	Filterable PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
New Manufactured Fines Plant	5.20	2.06	0.42				
New Concrete Batch Plant	5.32	1.50	0.19				
New Wash Plant	11.73	3.58	0.47				
New D2 Bypass	0.32	0.29	0.14				
Total	22.57	7.43	1.22	0.00	0.00	0.00	0.00

Table 2c-1. Application Minor NSR Evaluation

Description	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
Minor NSR Evaluation						
PTE Increase for Minor NSR Evaluation [1]	5.46	0.92				
ADEQ Permitting Exemption Thresholds [2]	7.50	5	20.00	20.00	50.00	20.00
PTE Increase exceeds ADEQ Permitting Exemption Thresholds Triggered?	**No**	**No**	**No**	**No**	**No**	**No**

[1] PTE increases are compared against the permitting exemption thresholds for minor NSR applicability.
[2] Per Arizona Administrative Code (A.A.C.) R18-2-301.14 definition of Minor NSR Modification and R18-2-101.101 definition of "Permitting exemption thresholds".

Table 2c-2. New Manufactured Fines Plant - Minor NSR Applicability

Emission Source	PM_{10}	$PM_{2.5}$	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
New Manufactured Fines Plant	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
Pre-Project PTE	0.00	0.00				
Post-Project PTE	1.26	0.34				
Total PTE Increase	1.26	0.34				

Table 2c-3. New Concrete Batch Plant - Minor NSR Applicability

Emission Source	PM_{10}	$PM_{2.5}$	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
New Concrete Batch Plant	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
Pre-Project PTE	0.00	0.00				
Post-Project PTE	0.38	0.06				
Total PTE Increase	0.38	0.06				

Table 2c-4. New Wash Plant - Minor NSR Applicability

Emission Source	PM_{10}	$PM_{2.5}$	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
New Wash Plant	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
Pre-Project PTE	0.00	0.00				
Post-Project PTE	1.43	0.22				
Total PTE Increase	1.43	0.22				

Table 2c-5. New D2 Bypass - Minor NSR Applicability

Emission Source	PM_{10}	$PM_{2.5}$	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
New D2 Bypass	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
Pre-Project PTE	0.00	0.00				
Post-Project PTE	0.29	0.14				
Total PTE Increase	0.29	0.14				

Table 2c-6. Twin Peaks Sources - Minor NSR Applicability

Emission Source	PM_{10}	$PM_{2.5}$	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
Twin Peaks Sources	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
Pre-Project PTE [1]	4.29	0.68				
Post-Project PTE [2]	6.39	0.85				
Total PTE Increase	2.09	0.16				

[1] The following emission points are excluded from the Pre-Project PTE because they result in a PTE decrease that cannot be considered for minor NSR applicability determination purposes, per ADEQ guidance received on 10/2/2026: Screen S-1, Conveyor C-3 into Conveyor C-13, Twin Peaks Silo, and Splitter into Conveyor C-14.
[2] The following emission points are excluded from the Post-Project PTE because they result in a PTE decrease that cannot be considered for minor NSR applicability determination purposes, per ADEQ guidance received on 10/2/2026: Screen S-1, Conveyor C-3 into Conveyor C-13, Twin Peaks Silo, and Splitter into Conveyor C-14.

Table 2c-7. Roads - Minor NSR Applicability

Emission Source [1]	PM_{10}	$PM_{2.5}$	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
Roads	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
Pre-Project PTE	10.12	1.01				
Post-Project PTE	7.34	0.84				
Total PTE Increase	-2.78	-0.17				

[1] For minor NSR purposes, all all roads are considered a single emissions unit pursuant to A.A.C. R18-2-301.15(e)(iii).

Table 3a. Wash Plant - Emission Factors and Parameters

Emission Point Number	Description	Annual Throughput [1]	Control Type	Particulate Control Efficiency	Uncontrolled Emission Factor [2,3,4]			Controlled Emission Factor		
					PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
		(tpy)		(%)	(lb/ton)	(lb/ton)	(lb/ton)	(lb/ton)	(lb/ton)	(lb/ton)
WP-DP-1	Sand and Gravel Plant and MA Fines Material Pile 2 Feed into Wash Plant Tunnel Convevor	1,425,000	Tunnel/Under-pile Conveyor	80%	0.005209	0.002464	0.0003731	0.001042	0.000493	0.0000746
WP-DP-2	Wash Plant Feed Tunnel Convevor into Convevor C-47	1,425,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.0000373
WP-DP-3	Loader into Hopper 5	75,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.0000373
WP-DP-4	Hopper 5 into Conveyor C-66	75,000	Water-based Wet Suppression	90%	0.000016	0.000016	0.0000160	0.000002	0.000002	0.0000016
WP-DP-5	Conveyor C-66 into Conveyor C-67	75,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.0000373
WP-DP-6	Conveyor C-67 into Conveyor C-47	75,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.0000373
WP-DP-7	Conveyor C-47 into Conveyor C-48	1,500,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.0000373
WP-DP-8	Conveyor C-48 into Blade Mill BM-1	1,500,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.0000373
WP-DP-9	Screen S-7	1,500,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-10	Convevor C-49 into Convevor C-50	75,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-11	Convevor C-50 into ASTM #4 Rock Material Pile	75,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-12	ASTM #4 Rock Material Pile Loadout	75,000	Inherent, Wet Material	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.0000373
WP-DP-13	Convevor C-51 into Coarse Material Washer CMW-1	825,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-14	Screen S-8	825,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-15	Conveyor C-52 into Conveyor C-53	510,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-16	Conveyor C-53 into #57 Pile	510,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-17	#57 Pile Loadout	510,000	Inherent , Wet Material	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.0000373
WP-DP-18	Convevor C-54 into Convevor C-55	150,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-19	Convevor C-55 into ASTM #8 Rock Material Pile	150,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-20	ASTM #8 Rock Material Pile Loadout	150,000	Inherent , Wet Material	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.0000373
WP-DP-21	Convevor C-56 into Conveyor C-57	30,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-22	Conveyor C-57 into Washed 1/4" Material Pile	30,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-23	Washed 1/4" Material Pile Loadout	30,000	Inherent, Wet Material	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.0000373
WP-DP-24	Fine Material Washer FM-1 into Conveyor C-58	30,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-25	Conveyor C-58 into Conveyor C-59	30,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-26	Convevor C-59 into Birdseve Material Pile	30,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-27	Birdseve Material Pile Loadout	30,000	Inherent, Wet Material	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.0000373
WP-DP-28	Classifying Tank Underflow into Fine Material Washer FM-2	15,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-29	Classifying Tank Overflow into High Rate Thickener HRT-60	15,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-30	High Rate Thickener HRT-60 Underflow into Pile	15,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-31	Fine Material Washer FM-2 into Dewatering Screen DWS-1	15,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-32	Dewatering Screen DWS-1 into Conveyor C-60	15,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000298	0.0000451
WP-DP-33	Conveyor C-60 into Conveyor C-61	15,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000298	0.0000451
WP-DP-34	Conveyor C-61 into Washed Fine Sand Material Pile	15,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000298	0.0000451
WP-DP-35	Washed Fine Sand Material Pile Loadout	15,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000298	0.0000451
WP-DP-36	Classifying Tank Underflow into Fine Material Washer FM-3	150,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-37	Fine Material Washer FM-3 into Dewatering Screen DWS-2	150,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-38	Dewatering Screen DWS-2 into Conveyor C-62	150,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000298	0.0000451
WP-DP-39	Conveyor C-62 into Conveyor C-63	150,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000298	0.0000451
WP-DP-40	Conveyor C-63 into Mortar Sand Material Pile	150,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000298	0.0000451
WP-DP-41	Mortar Sand Material Pile Loadout	150,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000298	0.0000451
WP-DP-42	Classifying Tank Underflow into Fine Material Washer FM-4	420,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-43	Fine Material Washer FM-4 into Dewatering Screen DWS-3	420,000	Material stream is saturated and no emissions are expected to be generated.							
WP-DP-44	Dewatering Screen DWS-3 into Convevor C-64	420,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000298	0.0000451
WP-DP-45	Conveyor C-64 into Conveyor C-65	420,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000298	0.0000451
WP-DP-46	Conveyor C-65 to Concrete Sand Material Pile	420,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000298	0.0000451
WP-DP-47	Concrete Sand Material Pile Loadout	420,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000298	0.0000451

[1] The annual throughput for each emissions point was calculated by multiplying the proposed capacity for the Twin Peaks Aggregate Wash Plant of 1,500,000 tpy times the percentage of material processed through each each piece of equipment.

[2] The loader transfer emission factor was obtained from AP-42 Section 11.19.2 Table 11.19.2-2 (Truck Unloading -Fragmented Stone).

[3] Uncontrolled emission factors using the "drop equation" in AP-42, Section 13.2.4 (Aggregate Handling and Storage Piles), November 2006 were calculated to represent emissions from material transfers, fine material washers, blade mills, and dewatering screens, as follows:

$$E = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (pound [lb]/ton)}$$

Where:

E = Emission factor (lb/ton)

k = Particle size multiplier (dimensionless)

PM	PM_{10}	$PM_{2.5}$
0.74	0.35	0.053

U = Mean wind speed (miles per hour [mph]) 8.039

Per the surface wind speed data obtained from the Tucson Airport meteorological station published by ADEQ for the 2017-2021 period.

M = Material moisture content (%)

Aggregate	Dewatered Fines
1.77	8.00

Aggregate moisture content obtained from AP-42 Table 11.12-2 footnote b. Dewatered fines moisture content per vendor specification sheet

[4] Emission factors from AP-42, Table 11.19.2-2 were used to represent emissions from the sizing screens:

	PM	PM_{10}	$PM_{2.5}$	
Screening (uncontrolled)	0.025	0.0087	0.00870	$PM_{2.5}$ conservatively assumed to be equal to PM_{10}.
Screening (controlled)	0.0022	0.00074	0.0001	

Table 3b. New Wash Plant - Piles Emission Factors and Parameters

Emission Unit ID	Description	Max. Stockpile Area (acre)	Silt Content [1] (%)	f [1] %	Emission Factor [1,2] (lb/day/acre)		
					PM	PM_{10}	$PM_{2.5}$
WP-Pile-1	ASTM #4 Washed Concrete Aggregate	0.50	2.6	0.53	1.36E-01	6.78E-02	1.03E-02
WP-Pile-2	ASTM #57 Washed Concrete Aggregate	1.00	2.6	0.53	1.36E-01	6.78E-02	1.03E-02
WP-Pile-3	ASTM #8 Washed Concrete Aggregate	0.50	2.6	0.53	1.36E-01	6.78E-02	1.03E-02
WP-Pile-4	Birdseye Material Pile	1.00	2.6	0.53	1.36E-01	6.78E-02	1.03E-02
WP-Pile-5	ASTM C33 Concrete Sand	1.00	2.6	0.53	1.36E-01	6.78E-02	1.03E-02
WP-Pile-6	Washed Mortar Sand	0.50	2.6	0.53	1.36E-01	6.78E-02	1.03E-02
WP-Pile-7	Washed Fine Sand	0.25	2.6	0.53	1.36E-01	6.78E-02	1.03E-02

[1] Emission factors for continuously active storage stockpiles per Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, EPA-450/2-92-004, September 1992.
The PM_{10} emission factor is half the PM emission.

$$EF = 1.7\left(\frac{s}{1.5}\right)\left(\frac{365-P}{235}\right)\left(\frac{f}{15}\right)$$

Where:

EF = PM Emission factor (lb/day/acre)
s = Silt Content (%) for sand obtained from AP-42 Section 13.2.4 Table 13.2.4-1. ASTM #4, #57, and #8 are washed aggregate standards with very low silt content per CalPortland on 8/6/2025. Silt content for these washed aggregate grades was conservatively assumed to be equal to that of the silt content from sand in AP-42 Section 13.2.4 Table
f = % of time the unobstructed wind speed exceeds 12 mph at the stockpile height
Based on wind speed data obtained from the ADEQ surface meteorological data file for Tucson, AZ for the 2017 to 2021 period (anemometer height of 10 m) and has been adjusted for value at each pile height using the following equation:

$$\frac{U_{hub}}{U_{anem}} = \frac{\ln(z_{hub}/z_0)}{\ln(z_{anem}/z_0)}$$

Where:
U_{hub} (m) = Adjusted wind speed at stockpile height
z_0 (m) = Surface roughness length. Control of Open Fugitive Dust Sources - EPA (1988). 0.3 cm for overburden (used for aggregate piles) and 0.01 cm for ground coal (used for fines piles).
z_{hub} (m) = Stockpile height
z_{anem} (m)= Anemometer height
P = Days per year with at least 0.01 inch precipitation (days)
60 Based on AP-42 Figure 13.2.1-2.

[2] Per AP-42, Section 13.2.4, November 2006, the particle size multiplier used for calculating emission factors is as follows:

PM_{10} = 0.35
$PM_{2.5}$ = 0.053

Table 3c. New Wash Plant - Paved Road Emission Factors and Parameters

Emission Unit ID	Vehicle Type	Description	Averaging Period	Particulate Matter Emission Factor Inputs [1]							Uncontrolled Emission Factor [1]			
				k			W	sL	P	P units				
				PM	PM_{10}	$PM_{2.5}$	(ton)	(%)			PM	PM_{10}	$PM_{2.5}$	Unit
Wash Plant														
WP-RT-4	Customer Truck	Customer Truck Travel to and from the Wash Plant - Segment 1	Hourly	0.011	0.0022	0.00054	28.25	7.1	1440	hours	1.59	0.32	0.08	lb/VMT
			Daily/Annual	0.011	0.0022	0.00054	28.25	7.1	60	days	1.90	0.38	0.09	lb/VMT

[1] Emission factors for vehicular traffic on paved roads per AP-42, Section 13.2.1 (Paved Roads), January 2011.

Hourly

$$E_{ext} = [\,k\,(sL)^{0.91} \times (W)^{1.02}\,]\,(1-1.2P/N) \quad (3)$$

Daily/Annual

$$E_{ext} = [\,k\,(sL)^{0.91} \times (W)^{1.02}\,]\,(1-P/4N) \quad (2)$$

Where:

E = Size-specific emission factor (pound per vehicle mile traveled [lb/VMT])
(Per AP-42 Table 13.2.2-1, January 2011)
k = Constants for equation 2 and 3

	PM	PM_{10}	$PM_{2.5}$
k =	0.011	0.0022	0.00054

sL = Surface material silt content (%) 7.1
(Silt content per U.S. AP-42 Table 13.2.1-3 for Sand and gravel processing plant roads.)
W = Mean vehicle weight (tons)
P = 60 Based on AP-42 Figure 13.2.1-2.

Table 3d. New Wash Plant - Unpaved Road Emission Factors and Parameters

Emission Unit ID	Vehicle Type	Description	Averaging Period	Particulate Matter Emission Factor Inputs [1]													Uncontrolled Emission Factor [1]			
				k			W	s	P	a			b							
				PM	PM_{10}	$PM_{2.5}$	(ton)	(%)	(days/yr)	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$		PM	PM_{10}	$PM_{2.5}$	Unit
Wash Plant																				
WP-RT-1	Caterpillar 988 Front End Loader	Loader Transfer from Feed Piles to Hopper 5	Hourly/Daily	4.9	1.5	0.15	63.79	4.8	-	0.7	0.9	0.9	0.45	0.45	0.45		10.21	2.60	0.26	lb/VMT
			Annual	-	-	-	63.79	4.8	60	-	-	-	-	-	-		8.53	2.17	0.22	lb/VMT
WP-RT-2	Caterpillar 982 XE Front End Loader	Loader from Wash Plant Stockpiles to Customer Trucks	Hourly/Daily	4.9	1.5	0.15	45.13	4.8	-	0.7	0.9	0.9	0.45	0.45	0.45		8.74	2.23	0.22	lb/VMT
			Annual	-	-	-	45.13	4.8	60	-	-	-	-	-	-		7.30	1.86	0.19	lb/VMT
WP-RT-3	Caterpillar 982 XE Front End Loader	Loader from Wash Plant Stockpiles to Secondary Stockpiles	Hourly/Daily	4.9	1.5	0.15	45.13	4.8	-	0.7	0.9	0.9	0.45	0.45	0.45		8.74	2.23	0.22	lb/VMT
			Annual	-	-	-	45.13	4.8	60	-	-	-	-	-	-		7.30	1.86	0.19	lb/VMT
WP-RT-5	Customer Truck	Customer Truck Travel to and from the Wash Plant - Segment 2	Hourly/Daily	4.9	1.5	0.15	28.25	4.8	-	0.7	0.9	0.9	0.45	0.45	0.45		7.08	1.80	0.18	lb/VMT
			Annual	-	-	-	28.25	4.8	60	-	-	-	-	-	-		5.91	1.51	0.15	lb/VMT

[1] Emission factors for vehicular traffic on unpaved roads per AP-42, Section 13.2.2 (Unpaved Roads), November 2006.

Short-Term

$$E = k\,(s/12)^a (W/3)^b \quad (1a)$$

Annual

$$E_{ext} = E\,[(365-P)/365] \quad (2)$$

Where:

E = Size-specific emission factor (pound per vehicle mile traveled [lb/VMT])
(Per AP-42 Table 13.2.2-2, November 2006)
k, a, b = Constants for equation 1a

	PM	PM_{10}	$PM_{2.5}$
k =	4.9	1.5	0.15
a =	0.7	0.9	0.9
b =	0.45	0.45	0.45

s = Surface material silt content (%) 4.8
(Silt content per U.S. AP-42 Table 13.2.2-1 for Sand and gravel processing plant roads.)
W = Mean vehicle weight (tons)
P = 60 Based on AP-42 Figure 13.2.1-2.

Table 3e. Twin Peaks - Material Processing and Handling PM Emissions

Emission Point Number	Description	Controlled Annual Emissions [1,2] (tpy)		
		PM	PM_{10}	$PM_{2.5}$
WP-DP-1	Sand and Gravel Plant and MA Fines Material Pile 2 Feed into Wash Plant Tunnel Conveyor	0.74	0.35	0.05
WP-DP-2	Wash Plant Feed Tunnel Conveyor into Conveyor C-47	0.37	0.18	0.03
WP-DP-3	Loader into Hopper 5	0.020	0.009	0.001
WP-DP-4	Hopper 5 into Conveyor C-66	0.000	0.000	0.000
WP-DP-5	Conveyor C-66 into Conveyor C-67	0.020	0.009	0.001
WP-DP-6	Conveyor C-67 into Conveyor C-47	0.020	0.009	0.001
WP-DP-7	Conveyor C-47 into Conveyor C-48	0.391	0.185	0.028
WP-DP-8	Conveyor C-48 into Blade Mill BM-1	0.391	0.185	0.028
WP-DP-9	Screen S-7	0.000	0.000	0.000
WP-DP-10	Conveyor C-49 into Conveyor C-50	0.000	0.000	0.000
WP-DP-11	Conveyor C-50 into ASTM #4 Rock Material Pile	0.000	0.000	0.000
WP-DP-12	ASTM #4 Rock Material Pile Loadout	0.020	0.009	0.001
WP-DP-13	Conveyor C-51 into Coarse Material Washer CMW-1	0.000	0.000	0.000
WP-DP-14	Screen S-8	0.000	0.000	0.000
WP-DP-15	Conveyor C-52 into Conveyor C-53	0.000	0.000	0.000
WP-DP-16	Conveyor C-53 into #57 Pile	0.000	0.000	0.000
WP-DP-17	#57 Pile Loadout	0.133	0.063	0.010
WP-DP-18	Conveyor C-54 into Conveyor C-55	0.000	0.000	0.000
WP-DP-19	Conveyor C-55 into ASTM #8 Rock Material Pile	0.000	0.000	0.000
WP-DP-20	ASTM #8 Rock Material Pile Loadout	0.039	0.018	0.003
WP-DP-21	Conveyor C-56 into Conveyor C-57	0.000	0.000	0.000
WP-DP-22	Conveyor C-57 into Washed 1/4" Material Pile	0.000	0.000	0.000
WP-DP-23	Washed 1/4" Material Pile Loadout	0.008	0.004	0.001
WP-DP-24	Fine Material Washer FM-1 into Conveyor C-58	0.000	0.000	0.000
WP-DP-25	Conveyor C-58 into Conveyor C-59	0.000	0.000	0.000
WP-DP-26	Conveyor C-59 into Birdseye Material Pile	0.000	0.000	0.000
WP-DP-27	Birdseye Material Pile Loadout	0.008	0.004	0.001
WP-DP-28	Classifying Tank Underflow into Fine Material Washer FM-2	0.000	0.000	0.000
WP-DP-29	Classifying Tank Overflow into High Rate Thickener HRT-60	0.000	0.000	0.000
WP-DP-30	High Rate Thickener HRT-60 Underflow into Pile	0.000	0.000	0.000
WP-DP-31	Fine Material Washer FM-2 into Dewatering Screen DWS-1	0.000	0.000	0.000
WP-DP-32	Dewatering Screen DWS-1 into Conveyor C-60	0.005	0.002	0.000
WP-DP-33	Conveyor C-60 into Conveyor C-61	0.005	0.002	0.000
WP-DP-34	Conveyor C-61 into Washed Fine Sand Material Pile	0.005	0.002	0.000
WP-DP-35	Washed Fine Sand Material Pile Loadout	0.005	0.002	0.000
WP-DP-36	Classifying Tank Underflow into Fine Material Washer FM-3	0.000	0.000	0.000
WP-DP-37	Fine Material Washer FM-3 into Dewatering Screen DWS-2	0.000	0.000	0.000
WP-DP-38	Dewatering Screen DWS-2 into Conveyor C-62	0.047	0.022	0.003
WP-DP-39	Conveyor C-62 into Conveyor C-63	0.047	0.022	0.003
WP-DP-40	Conveyor C-63 into Mortar Sand Material Pile	0.047	0.022	0.003
WP-DP-41	Mortar Sand Material Pile Loadout	0.047	0.022	0.003
WP-DP-42	Classifying Tank Underflow into Fine Material Washer FM-4	0.000	0.000	0.000
WP-DP-43	Fine Material Washer FM-4 into Dewatering Screen DWS-3	0.000	0.000	0.000
WP-DP-44	Dewatering Screen DWS-3 into Conveyor C-64	0.132	0.063	0.009
WP-DP-45	Conveyor C-64 into Conveyor C-65	0.132	0.063	0.009
WP-DP-46	Conveyor C-65 to Concrete Sand Material Pile	0.132	0.063	0.009
WP-DP-47	Concrete Sand Material Pile Loadout	0.132	0.063	0.009
Piles				
WP-Pile-1	ASTM #4 Washed Concrete Aggregate	0.01	0.01	0.001
WP-Pile-2	ASTM #57 Washed Concrete Aggregate	0.02	0.01	0.002
WP-Pile-3	ASTM #8 Washed Concrete Aggregate	0.01	0.01	0.001
WP-Pile-4	Birdseye Material Pile	0.02	0.01	0.002
WP-Pile-5	ASTM C33 Concrete Sand	0.02	0.01	0.002
WP-Pile-6	Washed Mortar Sand	0.01	0.01	0.001
WP-Pile-7	Washed Fine Sand	0.01	0.00	0.000

[1] Annual emissions for all emission sources were calculated by multiplying the maximum annual throughput times the calculated emission factor.

Table 4a-1. Twin Peaks Existing Sources - Transfer Point Emission Factors and Parameters

Emission Point Number	Description	Annual Throughput [1,2]	Control Method	Particulate Control Efficiency	Uncontrolled Emission Factor [3,4,5,6]			Controlled Emission Factor		
					PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
		(tpy)		(%)	(lb/ton)	(lb/ton)	(lb/ton)	(lb/ton)	(lb/ton)	(lb/ton)
Primary Crushing from Quarry										
TP-DP-1	Belt Conveyor B11-BC2 to Belt Conveyor B11-TS-BC1	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.000037
TP-DP-2	Belt Conveyor B11-TS-BC1 to Belt Conveyor B11-TS-BC2	800,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.000037
TP-DP-3	Belt Conveyor B11-TS-BC2 to the Aggregate Plant Feed Stockpile	800,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.000037
TP-DP-4	Aggregate Plant Feed Stockpile Loadout	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.000037
Twin Peaks Rock										
TP-DP-5	Loader Transfer into Hopper 1	768,000	Water-based Wet Suppression	90%	0.000016	0.000016	0.000016	0.0000016	0.0000016	0.0000016
TP-DP-6	Hopper 1 into Convevor C-1	768,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-7	Convevor C-1 into Convevor C-2	768,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-8	Screen S-1	368,000	Water-based Wet Suppression	In emission factor	0.025	0.0087	0.0087	0.0022	0.00074	0.000050
TP-DP-9	Convevor C-4 into Convevor C-3	299,200	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-10	Convevor C-3 into Convevor C-13	296,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-11	Convevor C-13 into 1/2" Screen Fill Material Pile	296,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-12	1/2" Screen Fill Material Pile Loadout	296,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-13	Crusher CR-1	432,000	TP-DC1 Baghouse	Emissions Routed to TP-DC1						
TP-DP-14	Convevor C-6 into Convevor C-7	432,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-15	Screen S-2	432,000	Water-based Wet Suppression	In emission factor	0.025	0.0087	0.0087	0.0022	0.00074	0.000050
TP-DP-16	Convevor C-11 into Convevor C-5	80,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-17	Convevor C-8 into Convevor C-10	424,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-18	Convevor C-9 into Convevor C-10	64,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-19	Convevor C-4 into Convevor C-10	299,200	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-20	Convevor C-10 into Solitter 1	424,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-21	Solitter 1 into Convevor C-12	336,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-22	Twin Peaks Lime Silo	168,000	AG-LS1-DC Bin Vent	In emission factor	-	-	-	0.00099	0.00034	0.00034
TP-DP-23	Solitter into Convevor C-14	152,000	Water-based Wet Suppression	90%	0.005209	0.0024636	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-24	Lime Silo into Convevor C-14	168,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-25	Convevor C-14 into Convevor C-15	168,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-26	Convevor C-15 into Convevor C-26	168,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-27	Convevor C-26 into Limestone Stockpile	168,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-28	Limestone Stockpile Loadout	168,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-29	Loader into Hopper 2	32,000	Water-based Wet Suppression	90%	0.000016	0.000016	0.000016	0.0000016	0.0000016	0.0000016
TP-DP-30	Hopper 2 into Convevor C-29	32,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-31	Convevor C-29 into Convevor C-14	32,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-32	Convevor C-12 into Convevor C-25	336,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-33	Convevor C-25 into Solitter 2	336,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-34	Screen S-3	168,000	Water-based Wet Suppression	In emission factor	0.025000	0.008700	0.008700	0.0022	0.00074	0.000050
TP-DP-35	Screen S-4	168,000	Water-based Wet Suppression	In emission factor	0.025000	0.008700	0.008700	0.0022	0.00074	0.000050
TP-DP-36	Convevor C-27 into Convevor C-28	16,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-37	Convevor C-28 into Convevor C-11	16,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-38	Convevor C-27 into Convevor C-16	16,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-39	Convevor C-16 into Product Pile 3	16,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-40	Product Pile 3 Loadout	16,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-41	Convevor C-17 into Convevor C-20	104,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-42	Convevor C-20 into Product Pile 1	104,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-43	Product Pile 1 Loadout	104,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-44	Convevor C-18 into Convevor C-19	64,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-45	Convevor C-19 into Product Pile 2	64,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-46	Product Pile 2 Loadout	64,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-47	Convevor C-21 into Convevor C-23	36,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-48	Convevor C-22 into Convevor C-23	36,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-49	Convevor C-23 into Convevor C-24	72,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-50	Convevor C-24 into Product Pile 4	72,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
TP-DP-51	Product Pile 4 Loadout	72,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
Cotton Field Primary and Overland										
CF-DP1	Excavation of Cotton Field Pit	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.0000373
CF-DP2	Loader Feed to Grizzly F-2	800,000	Water-based Wet Suppression	90%	0.000016	0.000016	0.000016	0.0000016	0.0000016	0.0000016
CF-DP3	Crusher CR-2	216,000	Water-based Wet Suppression	In emission factor	0.005400	0.002400	0.002400	0.0012	0.00054	0.00010
CF-DP4	Grizzly F-2 into Convevor C-30	584,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
CF-DP5	Convevor C-30 into Convevor C-31	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
CF-DP6	Convevor C-31 to into Convevor C-32	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
CF-DP7	Screen S-5	800,000	Water-based Wet Suppression	In emission factor	0.025000	0.008700	0.008700	0.0022	0.00074	0.000050
CF-DP8	Crusher CR-3	512,000	Water-based Wet Suppression	In emission factor	0.005400	0.002400	0.002400	0.0012	0.00054	0.000100
CF-DP9	Convevor C-35 into Convevor C-36	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
CF-DP10	Convevor C-36 Convevor C-37	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
CF-DP11	Convevor C-37 Convevor C-38	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
CF-DP12	Convevor C-38 to Convevor C-39	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
CF-DP13	Convevor C-39 to Convevor C-40	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
CF-DP14	Convevor C-40 to Convevor C-41	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
CF-DP15	Convevor C-41 to Convevor C-42	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
CF-DP16	Convevor C-42 to Convevor C-43	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
CF-DP17	Convevor C-43 to Convevor C-44	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
CF-DP18	Convevor C-44 to Convevor C-74	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.00052087	0.00024636	3.73059E-05
CF-DP19	Convevor C-74 into Cotton Field Aggregate Storage Pile	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP20	Aggregate Storage Pile Loadout	800,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05

[1] The annual throughput for each emission point was calculated by multiplying the permitted capacity for the Twin Peaks aggregate plant of 800,000 tpy times the percentage of material processed through each each piece of equipment.

[2] The annual throughput for each emission point was calculated by multiplying the throughput for the Cotton Field Primary and Overland of 800,000 tpy times the percentage of material processed through each each piece of equipment.

[3] The loader transfer emission factor was obtained from AP-42 Section 11.19.2 Table 11.19.2-2 for PM_{10} (Truck Unloading -Fragmented Stone). It is conservatively assumed that $PM_{10} = PM_{2.5}$

[4] Uncontrolled emission factors using the "drop equation" contained in AP-42, Section 13.2.4 (Aggregate Handling and Storage Piles), November 2006, as follows:

$$E = k(0.0032)\ \frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}\ \text{(pound (lb)/ton)}$$

Where:

E = Emission factor (lb/ton)

k = Particle size multiplier (dimensionless)

PM	PM_{10}	$PM_{2.5}$
0.74	0.35	0.053

U = Mean wind speed (miles per hour [mph]) 8.039

Per the surface wind speed data obtained from the Tucson Airport meteorological station published by ADEQ for the 2017-2021 period.

M = Material moisture content (%) 1.77

Per moisture content of aggregate from AP-42 Table 11.12-2 footnote b)

[5] Crushing, screening, and grizzly emission factors from AP-42, Table 11.19.2-2 were used per historic ADEQ emission factors in "PM EF" tab. The emission factors are inclusive of emissions generated by the drop into and out of the equipment unit and the stone-to-stone attrition during crushing and screening processes.

	PM	PM_{10}	$PM_{2.5}$	
Tertiary crushing (uncontrolled)	0.0054	0.0024	0.0024	$PM_{2.5}$ conservativelv assumed to be equal to PM_{10}.
Tertiary crushing (controlled)	0.0012	0.00054	0.00010	
Screening (uncontrolled)	0.025	0.0087	0.00870	$PM_{2.5}$ conservativelv assumed to be equal to PM_{10}.
Screening (controlled)	0.0022	0.00074	0.000050	

[6] Lime silo loading emissions (TP-DP-22) emission factors per historical values approved by ADEQ in Permit No. 85424 obtained from AP-42 Section 11.12 Table 11.12-2 for cement unloading to elevated storage silo (pneumatic).

Table 4a-2. Twin Peaks Existing Sources - Piles Emission Factors and Parameters

Emission Unit ID	Description	Max. Stockpile Area (acre)	Silt Content [1] (%)	f [1] %	Emission Factor [1,2]		
					PM	PM_{10}	$PM_{2.5}$
TP-Pile-1	1/2" Screen Fill Pile	3.75	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-2	Product Pile 1	0.84	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-3	Product Pile 2	2.76	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-4	Product Pile 3	2.77	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-5	Product Pile 4	2.32	2.6	0.54	1.37E-01	6.86E-02	1.04E-02
TP-Pile-6	Limestone Stockpile	1.03	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
CF-Pile-1	Cotton Field Aggregate Storage Pile	5.50	7.1	0.53	3.70E-01	1.85E-01	2.80E-02

[1] Emission factors for storage stockpiles per Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, EPA-450/2-92-004, September 1992.
The PM_{10} emission factor is half the PM emission.

$$EF = 1.7\left(\frac{s}{1.5}\right)\left(\frac{365-P}{235}\right)\left(\frac{f}{15}\right)$$

Where:

EF = PM Emission factor (lb/day/acre)

s = Silt Content (%), for aggregate obtained from AP-42 Section 13.2.1 Table 13.2.1-3 for sand and gravel processing, and for sand obtained from AP-42 Section 13.2.4 Table 13.2.4-1.

f = % of time the unobstructed wind speed exceeds 12 mph at the stockpile height

Based on wind speed data obtained from the ADEQ AERMET data file for Tucson, AZ for the 2017 to 2021 period (anemometer height of 10 m) and has been adjusted for value at each pile height using the following equation:

$$\frac{U_{hill}}{U_{anem}} = \frac{\ln(z_{hill}/z_0)}{\ln(z_{anem}/z_0)}$$

Where:

U_{hill} (m) = Adjusted wind speed at stockpile height

z_0 (m) = Surface roughness length. Control of Open Fugitive Dust Sources - EPA (1988). 0.3 cm for overburden (used for aggregate piles) and 0.01 cm for ground coal (used for fines piles).

z_{hill} (m) = Stockpile height

z_{anem} (m)= Anemometer height

P = Days per year with at least 0.01 inch precipitation (days)
60 Based on AP-42 Figure 13.2.1-2.

[2] Per AP-42, Section 13.2.4, November 2006, the particle size multiplier used for calculating emission factors is as follows:

PM_{10} = 0.35
$PM_{2.5}$ = 0.053

Table 4a-3. Twin Peaks Existing Sources - Road Emission Factors and Parameters

Emission Unit ID	Vehicle Type	Description	Averaging Period	Particulate Matter Emission Factor Inputs [1]												Uncontrolled Emission Factor [1]			
				k			W	s	P	a			b						
				PM	PM_{10}	$PM_{2.5}$	(ton)	(%)	(days/yr)	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	Unit
Twin Peaks Rock and Stone Aggregate Plant																			
TP-RT-1	Caterpillar 988 Front End Loader	Loader Transfer from Twin Peaks Aggregate Plant Feed Stockpile to Hopper 1	Hourly/Daily	4.9	1.5	0.15	63.79	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45	10.21	2.60	0.26	lb/VMT
			Annual	-	-	-	63.79	4.8	60	-	-	-	-	-	-	8.53	2.17	0.22	lb/VMT
TP-RT-2	Caterpillar 982 XE Front End Loader	Loader Transfer from Aggregate Plant Finished Stockpiles to Customer Trucks	Hourly/Daily	4.9	1.5	0.15	45.13	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45	8.74	2.23	0.22	lb/VMT
			Annual	-	-	-	45.13	4.8	60	-	-	-	-	-	-	7.30	1.86	0.19	lb/VMT
TP-RT-3	Customer Truck	Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant	Hourly/Daily	4.9	1.5	0.15	28.25	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45	7.08	1.80	0.18	lb/VMT
			Annual	-	-	-	28.25	4.8	60	-	-	-	-	-	-	5.91	1.51	0.15	lb/VMT
Cotton Field Primary and Overland																			
TP-RT-4	Caterpillar 982 XE Front End Loader	Loader Travel from Equipment Parking to Pit	Hourly/Daily	4.9	1.5	0.15	56.29	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45	9.65	2.46	0.25	lb/VMT
			Annual	-	-	-	56.29	4.8	60	-	-	-	-	-	-	8.07	2.06	0.21	lb/VMT
TP-RT-5	Caterpillar 988 Front End Loader	Loader Transfer from Cotton Field Pit Face to Grizzly F-2	Hourly/Daily	4.9	1.5	0.15	63.79	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45	10.21	2.60	0.26	lb/VMT
			Annual	-	-	-	63.79	4.8	60	-	-	-	-	-	-	8.53	2.17	0.22	lb/VMT

[1] Emission factors for vehicular traffic on unpaved roads per AP-42, Section 13.2.2 (Unpaved Roads), November 2006.

Short-Term $$E = k\,(s/12)^a(W/3)^b \quad (1a)$$

Annual $$E_{ext} = E\,[(365-P)/365] \quad (2)$$

Where:

E = Size-specific emission factor (pound per vehicle mile traveled [lb/VMT])
(Per AP-42 Table 13.2.2-2, November 2006)

k, a, b = Constants for equation 1a

	PM	PM_{10}	$PM_{2.5}$
k =	4.9	1.5	0.15
a =	0.7	0.9	0.9
b =	0.45	0.45	0.45

s = Surface material silt content (%) 4.8
(Silt content per U.S. AP-42 Table 13.2.2-1 for Sand and gravel processing plant roads.)

W = Mean vehicle weight (tons)

P = 60 Based on AP-42 Figure 13.2.1-2.

Table 4a-4. Twin Peaks - Material Processing and Handling PM Emissions

Emission Point Number	Description	Controlled Annual Emissions [1,2] (tpy)		
		PM	PM_{10}	$PM_{2.5}$
Primary Crushing from Quarry				
TP-DP-1	Belt Conveyor B11-BC2 to Belt Conveyor B11-TS-BC1	0.21	0.10	0.01
TP-DP-2	Belt Conveyor B11-TS-BC1 to Belt Conveyor B11-TS-BC2	0.21	0.10	0.01
TP-DP-3	Belt Conveyor B11-TS-BC2 to the Aggregate Plant Feed Stockpile	0.21	0.10	0.01
TP-DP-4	Aggregate Plant Feed Stockpile Loadout	0.21	0.10	0.01
Twin Peaks Rock and Stone Plant				
TP-DP-5	Loader Transfer into Hopper 1	0.00061	0.00061	0.00061
TP-DP-6	Hopper 1 into Convevor C-1	0.200	0.095	0.014
TP-DP-7	Convevor C-1 into Convevor C-2	0.200	0.095	0.014
TP-DP-8	Screen S-1	0.405	0.136	0.009
TP-DP-9	Convevor C-4 into Convevor C-3	0.078	0.037	0.006
TP-DP-10	Convevor C-3 into Convevor C-13	0.077	0.036	0.006
TP-DP-11	Convevor C-13 into 1/2" Screen Fill Material Pile	0.08	0.036	0.006
TP-DP-12	1/2" Screen Fill Material Pile Loadout	0.08	0.036	0.006
TP-DP-13	Crusher CR-1	1.26	0.126	0.095
TP-DP-14	Convevor C-6 into Convevor C-7	0.11	0.053	0.008
TP-DP-15	Screen S-2	0.48	0.160	0.011
TP-DP-16	Convevor C-11 into Convevor C-5	0.02	0.010	0.001
TP-DP-17	Convevor C-8 into Convevor C-10	0.11	0.052	0.008
TP-DP-18	Convevor C-9 into Convevor C-10	0.02	0.008	0.001
TP-DP-19	Convevor C-4 into Convevor C-10	0.08	0.037	0.006
TP-DP-20	Convevor C-10 into Splitter 1	0.11	0.052	0.008
TP-DP-21	Splitter 1 into Convevor C-12	0.088	0.041	0.006
TP-DP-22	Twin Peaks Lime Silo	0.083	0.029	0.029
TP-DP-23	Splitter into Convevor C-14	0.040	0.019	0.003
TP-DP-24	Lime Silo into Convevor C-14	0.044	0.021	0.003
TP-DP-25	Convevor C-14 into Convevor C-15	0.044	0.021	0.003
TP-DP-26	Convevor C-15 into Convevor C-26	0.044	0.021	0.003
TP-DP-27	Convevor C-26 into Limestone Stockpile	0.044	0.021	0.003
TP-DP-28	Limestone Stockpile Loadout	0.044	0.021	0.003
TP-DP-29	Loader into Hopper 2	0.000	0.000	0.000
TP-DP-30	Hopper 2 into Convevor C-29	0.008	0.004	0.001
TP-DP-31	Convevor C-29 into Convevor C-14	0.008	0.004	0.001
TP-DP-32	Convevor C-12 into Convevor C-25	0.088	0.041	0.006
TP-DP-33	Convevor C-25 into Splitter 2	0.088	0.041	0.006
TP-DP-34	Screen S-3	0.185	0.062	0.004
TP-DP-35	Screen S-4	0.185	0.062	0.004
TP-DP-36	Convevor C-27 into Convevor C-28	0.004	0.002	0.000
TP-DP-37	Convevor C-28 into Convevor C-11	0.004	0.002	0.000
TP-DP-38	Convevor C-27 into Convevor C-16	0.004	0.002	0.000
TP-DP-39	Convevor C-16 into Product Pile 3	0.004	0.002	0.000
TP-DP-40	Product Pile 3 Loadout	0.004	0.002	0.000
TP-DP-41	Convevor C-17 into Convevor C-20	0.027	0.013	0.002
TP-DP-42	Convevor C-20 into Product Pile 1	0.027	0.013	0.002
TP-DP-43	Product Pile 1 Loadout	0.027	0.013	0.002
TP-DP-44	Convevor C-18 into Convevor C-19	0.017	0.008	0.001
TP-DP-45	Convevor C-19 into Product Pile 2	0.017	0.008	0.001
TP-DP-46	Product Pile 2 Loadout	0.017	0.008	0.001
TP-DP-47	Convevor C-21 into Convevor C-23	0.009	0.004	0.001
TP-DP-48	Convevor C-22 into Convevor C-23	0.009	0.004	0.001
TP-DP-49	Convevor C-23 into Convevor C-24	0.019	0.009	0.001
TP-DP-50	Convevor C-24 into Product Pile 4	0.019	0.009	0.001
TP-DP-51	Product Pile 4 Loadout	0.019	0.009	0.001
Cotton Field Primary and Overland				
CF-DP1	Excavation of Cotton Field Pit	0.21	0.10	0.01
CF-DP2	Loader Feed to Grizzly F-2	0.00064	0.00064	0.00064
CF-DP3	Crusher CR-2	0.13	0.058	0.01
CF-DP4	Grizzly F-2 into Convevor C-30	0.15	0.072	0.01
CF-DP5	Convevor C-30 into Convevor C-31	0.21	0.10	0.01
CF-DP6	Convevor C-31 to into Convevor C-32	0.21	0.10	0.01
CF-DP7	Screen S-5	0.88	0.30	0.02
CF-DP8	Crusher CR-3	0.31	0.14	0.03
CF-DP9	Convevor C-35 into Convevor C-36	0.21	0.10	0.01
CF-DP10	Convevor C-36 Convevor C-37	0.21	0.10	0.01
CF-DP11	Convevor C-37 Convevor C-38	0.21	0.10	0.01
CF-DP12	Convevor C-38 to Convevor C-39	0.21	0.10	0.01
CF-DP13	Convevor C-39 to Convevor C-40	0.21	0.10	0.01
CF-DP14	Convevor C-40 to Convevor C-41	0.21	0.10	0.01
CF-DP15	Convevor C-41 to Convevor C-42	0.21	0.10	0.01
CF-DP16	Convevor C-42 to Convevor C-43	0.21	0.10	0.01
CF-DP17	Convevor C-43 to Convevor C-44	0.21	0.10	0.01
CF-DP18	Convevor C-44 to Convevor C-74	0.21	0.10	0.01
CF-DP19	Conveyor C-74 into Cotton Field Aggregate Storage Pile	0.21	0.10	0.01
CF-DP20	Aggregate Storage Pile Loadout	0.21	0.10	0.01
Piles				
TP-Pile-1	1/2" Screen Fill Pile	2.53E-01	1.27E-01	1.92E-02
TP-Pile-2	Product Pile 1	5.67E-02	2.84E-02	4.30E-03
TP-Pile-3	Product Pile 2	1.86E-01	9.32E-02	1.41E-02
TP-Pile-4	Product Pile 3	1.87E-01	9.35E-02	1.42E-02
TP-Pile-5	Product Pile 4	5.81E-02	2.90E-02	4.40E-03
TP-Pile-6	Limestone Stockpile	6.95E-02	3.48E-02	5.27E-03
CF-Pile-1	Cotton Field Aggregate Storage Pile	3.71E-01	1.86E-01	2.81E-02

[1] Annual emissions for all emission sources were calculated based on the throughput information and the calculated emission factor, except for sources routed to fabric filter controls, which were calculated using the following equation:
Annual emissions (tpy) = Flow Rate (acfm) x Max Outlet Grain Loading (gr/scf) x 60 (min/hr) / 7000 (gr/lb) x Hours of Operation per Year / 2000 (lbs/ton)
Using the parameters below.

TP-DC1 Baghouse:	Crusher Baghouse	
Max Outlet Grain Loading	0.004 (gr/dscf)	Historical outlet grain loading value revised based on vendor guarantee.
Stack Flow Rate	8395 (cfm)	Flow rate and annual operation hours information per the Facility's PTE workbooks provided by ADEQ on 8/21/2024.
Hours of Operation	8760 (hr/yr)	

Using the conversion factors given below:

7000	gr/lb
2000	lb/ton
60	min/hr

[2] PM_{10} and $PM_{2.5}$ speciation profiles provided in CARB Profile 373 for Rock Crushers.

PM	1.00
PM_{10}	0.10
$PM_{2.5}$	0.075

Table 4b-1. Twin Peaks Existing Sources - Transfer Point Emission Factors and Parameters

Emission Point Number	Description	Annual Throughput [1,2] (tpy)	Control Type	Particulate Control Efficiency (%)	Uncontrolled Emission Factor [3,4,5,6]			Controlled Emission Factor		
					PM (lb/ton)	PM_{10} (lb/ton)	$PM_{2.5}$ (lb/ton)	PM (lb/ton)	PM_{10} (lb/ton)	$PM_{2.5}$ (lb/ton)
Primary Crushing from Quarry										
TP-DP-1	Belt Conveyor B11-BC2 to Belt Conveyor B11-TS-BC1	1,400,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.000037
TP-DP-2	Belt Conveyor B11-TS-BC1 to Belt Conveyor B11-TS-BC2	1,400,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.000037
TP-DP-3	Belt Conveyor B11-TS-BC2 to the Aggregate Plant Feed Stockpile	1,400,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.000037
TP-DP-4	Aggregate Plant Feed Stockpile Loadout	1,400,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000521	0.000246	0.000037
Twin Peaks Rock and Stone Plant										
TP-DP-5	Loader Transfer into Hopper 1	1,100,000	Water-based Wet Suppression	90%	0.000016	0.000016	0.000016	0.0000016	0.0000016	0.0000016
TP-DP-6	Hopper 1 into Conveyor C-1	1,100,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-7	Conveyor C-1 into Conveyor C-2	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-52	Conveyor C-2 into Blade Mill BM-2	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-8	Screen S-1	1,100,000	Material stream is saturated and no emissions are expected to be generated.							
TP-DP-53	Fine Material Washer FM-5 into Dewatering Screen	209,000	Material stream is saturated and no emissions are expected to be generated.							
TP-DP-54	Dewatering Screen DWS-4 into Splitter 3	209,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000630	0.0000451
TP-DP-55	Splitter 3 into Conveyor C-4	99,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000630	0.0000451
TP-DP-56	Splitter 3 into Conveyor C-3	110,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000630	0.0000451
TP-DP-10	Conveyor C-3 into Conveyor C-13	110,000	Water-based Wet Suppression	90%	0.000630	0.000298	0.0000451	0.0000630	0.0000298	0.0000045
TP-DP-57	Conveyor C-13 into Washed MA Fines Stockpile	110,000	Inherent, Wet Material	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000630	0.0000451
TP-DP-58	Washed MA Fines Stockpile Loadout	110,000	Water-based Wet Suppression	In emission factor	0.000630	0.000298	0.0000451	0.000630	0.000630	0.0000451
TP-DP-13	Crusher CR-1	594,000	TP-DC1 Baghouse	100%	Emissions Routed to TP-DC1					
TP-DP-14	Conveyor C-6 into Conveyor C-7	594,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-15	Screen S-2	594,000	Water-based Wet Suppression	In emission factor	0.025	0.0087	0.0087	0.0022	0.00074	0.000050
TP-DP-16	Conveyor C-11 into Conveyor C-5	110,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-17	Conveyor C-8 into Conveyor C-10	583,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-59	Conveyor C-68 into Conveyor C-10	220,000	Inherent , Wet Material	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-19	Conveyor C-4 into Conveyor C-10	99,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-20	Conveyor C-10 into Splitter 1	583,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-21	Splitter 1 into Conveyor C-12	462,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-22	Twin Peaks Lime Silo	110,000	Upstream Water-based Wet Suppression	In emission factor	-	-	-	0.00099	0.00034	0.00034
TP-DP-23	Splitter 1 into Conveyor C-14	121,000	Upstream Water-based Wet Suppression	90%	0.005209	0.0024636	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-24	Lime Silo into Conveyor C-14	231,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-25	Conveyor C-14 into Conveyor C-15	231,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-26	Conveyor C-15 into Conveyor C-26	231,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-27	Conveyor C-26 into Limestone Stockpile	231,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-28	Limestone Stockpile Loadout	231,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-29	Loader into Hopper 2	44,000	Water-based Wet Suppression	90%	0.000016	0.000016	0.000016	0.0000016	0.0000016	0.0000016
TP-DP-30	Hopper 2 into Conveyor C-29	44,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-31	Conveyor C-29 into Conveyor C-14	44,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-32	Conveyor C-12 into Conveyor C-25	462,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-33	Conveyor C-25 into Splitter 2	462,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-34	Screen S-3	231,000	Water-based Wet Suppression	In emission factor	-	-	-	0.0022	0.00074	0.00005
TP-DP-35	Screen S-4	231,000	Water-based Wet Suppression	In emission factor	-	-	-	0.0022	0.00074	0.00005
TP-DP-36	Conveyor C-27 into Conveyor C-28	22,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-37	Conveyor C-28 into Conveyor C-11	22,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-38	Conveyor C-27 into Conveyor C-16	22,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-39	Conveyor C-16 into Product Pile 3	22,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-40	Product Pile 3 Loadout	22,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-41	Conveyor C-17 into Conveyor C-20	143,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-42	Conveyor C-20 into Product Pile 1	143,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-43	Product Pile 1 Loadout	143,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-44	Conveyor C-18 into Conveyor C-19	88,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-45	Conveyor C-19 into Product Pile 2	88,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-46	Product Pile 2 Loadout	88,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-47	Conveyor C-21 into Conveyor C-23	49,500	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-48	Conveyor C-22 into Conveyor C-23	49,500	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-49	Conveyor C-23 into Conveyor C-24	99,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-50	Conveyor C-24 into Product Pile 4	99,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
TP-DP-51	Product Pile 4 Loadout	99,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
Cotton Field Primary and Overland										
CF-DP1	Excavation of Cotton Field Pit	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP2	Loader Feed to Grizzly F-2	1,100,000	Water-based Wet Suppression	90%	0.000016	0.000016	0.000016	0.0000016	0.0000016	0.0000016
CF-DP3	Crusher CR-2	297,000	Water-based Wet Suppression	In emission factor	0.005400	0.002400	0.002400	0.0012	0.00054	0.00010
CF-DP4	Grizzly F-2 into Conveyor C-30	803,000	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP5	Conveyor C-30 into Conveyor C-31	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP6	Conveyor C-31 to into Conveyor C-32	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP7	Screen S-5	1,100,000	Water-based Wet Suppression	In emission factor	0.025000	0.008700	0.00870000	0.0022	0.00074	0.000050
CF-DP8	Crusher CR-3	704,000	Water-based Wet Suppression	In emission factor	0.025000	0.008700	0.008700	0.0012	0.00054	0.000100
CF-DP9	Conveyor C-35 into Conveyor C-36	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP10	Conveyor C-36 Conveyor C-37	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP11	Conveyor C-37 Conveyor C-38	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP12	Conveyor C-38 to Conveyor C-39	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP13	Conveyor C-39 to Conveyor C-40	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP14	Conveyor C-40 to Conveyor C-41	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP15	Conveyor C-41 to Conveyor C-42	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP16	Conveyor C-42 to Conveyor C-43	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP17	Conveyor C-43 to Conveyor C-44	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP18	Conveyor C-44 to Conveyor C-74	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05
CF-DP21	Conveyor C-74 into Sand and Gravel Plant Feed Stockpile	1,100,000	Water-based Wet Suppression	90%	0.005209	0.002464	0.0003731	0.000520875	0.00024636	3.73059E-05

[1] The annual throughput for each emissions point was calculated by multiplying the proposed capacity for Twin Peaks aggregate plant of 1,100,000 tpy times the percentage of material processed through each each piece of equipment.
[2] The annual throughput for each emission point was calculated by multiplying the throughput for the Cotton Field Primary and Overland of 1,100,000 tpy times the percentage of material processed through each each piece of equipment.
[3] The loader transfer emission factor was obtained from AP-42 Section 11.19.2 Table 11.19.2-2 for PM_{10} (Truck Unloading -Fragmented Stone). It is conservatively assumed that $PM_{10} = PM_{2.5}$
[4] Uncontrolled emission factors using the "drop equation" contained in AP-42, Section 13.2.4 (Aggregate Handling and Storage Piles), November 2006, as follows:

$$E = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (pound [lb]/ton)}$$

Where:
E = Emission factor (lb/ton)
k = Particle size multiplier (dimensionless)

PM	PM_{10}	$PM_{2.5}$
0.74	0.35	0.053

U = Mean wind speed (miles per hour [mph]) — 8.039 — Per the surface wind speed data obtained from the Tucson Airport meteorological station published by ADEQ for the 2017-2021 period.
M = Material moisture content (%)

Aggregate	Dewatered S-1 Underflow
1.77	8.00

Aggregate moisture content obtained from AP-42 Table 11.12-2 footnote b. Dewatered fines moisture content per vendor specification.

[5] Crushing, screening, and grizzly emission factors from AP-42, Table 11.19.2-2 were used per historic ADEQ emission factors in "PM EF" tab. The emission factors are inclusive of emissions generated by the transfers into and out of the equipment as well as the crushing and screening processes.

	PM	PM_{10}	$PM_{2.5}$	
Tertiary crushing (uncontrolled)	0.0054	0.0024	0.0024	$PM_{2.5}$ conservatively assumed to be equal to PM_{10}.
Tertiary crushing (controlled)	0.0012	0.00054	0.00010	
Screening (uncontrolled)	0.025	0.0087	0.00870	$PM_{2.5}$ conservatively assumed to be equal to PM_{10}.
Screening (controlled)	0.0022	0.00074	0.000050	

[4] Lime silo loading emissions (TP-DP-22) emission factors per historical values approved by ADEQ in Permit No. 85424 obtained from AP-42 Section 11.12 Table 11.12-2 for cement unloading to elevated storage silo (pneumatic).

Table 4b-2. Twin Peaks Existing Sources - Piles Emission Factors and Parameters

Emission Unit ID	Description	Max. Stockpile Area (acre)	Silt Content [1] (%)	f [1] %	Emission Factor [1,2] (lb/day/acre)		
					PM	PM_{10}	$PM_{2.5}$
TP-Pile-1	1/2" Screen Fill Pile	3.75	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-2	Product Pile 1	1.15	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-3	Product Pile 2	1.08	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-4	Product Pile 3	0.12	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-7	Product Pile 4	5.68	7.1	0.54	3.74E-01	1.87E-01	2.83E-02
TP-Pile-8	Washed MA Fines Pile	1.00	7.1	0.54	3.74E-01	1.87E-01	2.83E-02
TP-Pile-9	Limestone Stockpile	1.00	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
CF-Pile-1	Cotton Field Aggregate Storage Pile	5.44	7.1	0.54	3.74E-01	1.87E-01	2.83E-02

[1] Emission factors for storage stockpiles per Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, EPA-450/2-92-004, September 1992.

The PM_{30} emission factor is half the PM emission.

$$EF = 1.7\left(\frac{s}{1.5}\right)\left(\frac{365-P}{235}\right)\left(\frac{f}{15}\right)$$

Where:

EF = PM Emission factor (lb/day/acre)

s = Silt Content (%), obtained from AP-42 Section 13.2.1 Table 13.2.1-3 for sand and gravel processing.

f = % of time the unobstructed wind speed exceeds 12 mph at the stockpile height

Based on wind speed data obtained from the ADEQ AERMET data file for Tucson, AZ for the 2017 to 2021 period (anemometer height of 10 m) and has been adjusted for value at each pile height using the following equation:

$$\frac{U_{mh}}{U_{mm}} = \frac{\ln(z_{ph}/z_0)}{\ln(z_{pm}/z_0)}$$

Where:

U_{mh} (m) = Adjusted wind speed at stockpile height

z_0 (m) Surface roughness length. Control of Open Fugitive Dust Sources - EPA (1988). 0.3 cm for overburden (used for aggregate piles) and 0.01 cm for ground coal (used for fines piles).

z_{ph} (m) = Stockpile heiaht

P = Days per year with at least 0.01 inch precipitation (days)

60 Based on AP-42 Figure 13.2.1-2.

[2] Per AP-42, Section 13.2.4, November 2006, the particle size multiplier used for calculating emission factors is as follows:

PM_{10} = 0.35

$PM_{2.5}$ = 0.053

Table 4b-3. Twin Peaks Existing Sources - Paved Road Emission Factors and Parameters

Emission Unit ID	Vehicle Type	Description	Averaging Period	Particulate Matter Emission Factor Inputs [1]							Uncontrolled Emission Factor [1]			
				k			W	sL	P	P units				
				PM	PM_{10}	$PM_{2.5}$	(ton)	(%)			PM	PM_{10}	$PM_{2.5}$	Unit
Wash Plant														
TP-RT-3	Customer Truck	Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant - Segment 1	Hourly	0.011	0.0022	0.00054	28.25	7.1	1440	hours	1.59	0.32	0.08	lb/VMT
			Annual	0.011	0.0022	0.00054	28.25	7.1	60	days	1.90	0.38	0.09	lb/VMT

[1] Emission factors for vehicular traffic on paved roads per AP-42, Section 13.2.1 (Paved Roads), January 2011.

Hourly

$$E_{ext} = [\,k\,(sL)^{0.91} \times (W)^{1.02}\,]\,(1 - 1.2P/N) \quad (3)$$

Daily/Annual

$$E_{ext} = [\,k\,(sL)^{0.91} \times (W)^{1.02}\,]\,(1 - P/4N) \quad (2)$$

Where:

E = Size-specific emission factor (pound per vehicle mile traveled [lb/VMT])
(Per AP-42 Table 13.2.2-1, January 2011)

k = Constants for equation 2 and 3

	PM	PM_{10}	$PM_{2.5}$
k =	0.011	0.0022	0.00054

sL = Surface material silt content (%) 7.1
(Silt content per U.S. AP-42 Table 13.2.1-3 for Sand and gravel processing plant roads.)

W = Mean vehicle weight (tons)

P = 60 Based on AP-42 Figure 13.2.1-2.

Table 4b-4. Twin Peaks Existing Sources - Unpaved Road Emission Factors and Parameters

Emission Unit ID	Vehicle Type	Description	Averaging Period	Particulate Matter Emission Factor Inputs [1]													Uncontrolled Emission Factor [1]			
				k			W	s	P	a			b							
				PM	PM_{10}	$PM_{2.5}$	(ton)	(%)	(days/yr)	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$		PM	PM_{10}	$PM_{2.5}$	Unit
Twin Peaks Rock and Stone Aggregate Plant																				
TP-RT-1	Caterpillar 988 Front End Loader	Loader Transfer from Aggregate Plant Feed Stockpile to Hopper 1	Hourly/Daily	4.9	1.5	0.15	63.79	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45		10.21	2.60	0.26	lb/VMT
			Annual	-	-	-	63.79	4.8	60	-	-	-	-	-	-		8.53	2.17	0.22	lb/VMT
TP-RT-2	Caterpillar 982 XE Front End Loader	Loader Transfer from Aggregate Plant Finished Stockpiles to Customer Trucks	Hourly/Daily	4.9	1.5	0.15	45.13	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45		8.74	2.23	0.22	lb/VMT
			Annual	-	-	-	45.13	4.8	60	-	-	-	-	-	-		7.30	1.86	0.19	lb/VMT
TP-RT-4	Customer Truck	Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant - Segment 2	Hourly/Daily	4.9	1.5	0.15	28.25	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45		7.08	1.80	0.18	lb/VMT
			Annual	-	-	-	28.25	4.8	60	-	-	-	-	-	-		5.91	1.51	0.15	lb/VMT
Cotton Field Primary and Overland																				
TP-RT-5	Caterpillar 988 Front End Loader	Loader Travel from Equipment Parking to Pit	Hourly/Daily	4.9	1.5	0.15	56.29	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45		9.65	2.46	0.25	lb/VMT
			Annual	-	-	-	56.29	4.8	60	-	-	-	-	-	-		8.07	2.06	0.21	lb/VMT
TP-RT-6	Caterpillar 988 Front End Loader	Loader Transfer from Cotton Field Pit Face to Grizzly F-2	Hourly/Daily	4.9	1.5	0.15	63.79	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45		10.21	2.60	0.26	lb/VMT
			Annual	-	-	-	63.79	4.8	60	-	-	-	-	-	-		8.53	2.17	0.22	lb/VMT

[1] Emission factors for vehicular traffic on unpaved roads per AP-42, Section 13.2.2 (Unpaved Roads), November 2006.

Short-Term $E = k\,(s/12)^a(W/3)^b$ (1a)

Annual $E_{ext} = E\,[(365-P)/365]$ (2)

Where:

E = Size-specific emission factor (pound per vehicle mile traveled [lb/VMT])
(Per AP-42 Table 13.2.2-2, November 2006)

k, a, b = Constants for equation 1a

	PM	PM_{10}	$PM_{2.5}$
k =	4.9	1.5	0.15
a =	0.7	0.9	0.9
b =	0.45	0.45	0.45

s = Surface material silt content (%) 4.8
(Silt content per U.S. AP-42 Table 13.2.2-1 for Sand and gravel processing plant roads.)

W = Mean vehicle weight (tons)

P = 60 Based on AP-42 Figure 13.2.1-2.

Table 4b-5. Twin Peaks - Material Processing and Handling PM Emissions

Emission Point Number	Description	Controlled Annual Emissions [1,2] (tpy)		
		PM	PM_{10}	$PM_{2.5}$
Primary Crushing from Quarry				
TP-DP-1	Belt Conveyor B11-BC2 to Belt Conveyor B11-TS-BC1	0.36	0.17	0.03
TP-DP-2	Belt Conveyor B11-TS-BC1 to Belt Conveyor B11-TS-BC2	0.36	0.17	0.03
TP-DP-3	Belt Conveyor B11-TS-BC2 to the Aggregate Plant Feed Stockpile	0.36	0.17	0.03
TP-DP-4	Aggregate Plant Feed Stockpile Loadout	0.36	0.17	0.03
Twin Peaks Rock and Stone Plant				
TP-DP-5	Loader Transfer into Hopper 1	0.00	0.0009	0.0009
TP-DP-6	Hopper 1 into Conveyor C-1	0.29	0.135	0.0205
TP-DP-7	Conveyor C-1 into Conveyor C-2	0.29	0.135	0.0205
TP-DP-52	Conveyor C-2 into Blade Mill BM-2	0.29	0.135	0.0205
TP-DP-8	Screen S-1	0.00	0.00	0.00
TP-DP-53	Fine Material Washer FM-5 into Dewatering Screen DWS-4	0.00	0.00	0.00
TP-DP-54	Dewatering Screen DWS-4 into Splitter 3	0.07	0.066	0.0047
TP-DP-55	Splitter 3 into Conveyor C-4	0.03	0.031	0.0022
TP-DP-56	Splitter 3 into Conveyor C-3	0.03	0.035	0.0025
TP-DP-10	Conveyor C-3 into Conveyor C-13	0.00	0.002	0.0002
TP-DP-57	Conveyor C-13 into Washed MA Fines Stockpile	0.03	0.035	0.0025
TP-DP-58	Washed MA Fines Stockpile Loadout	0.03	0.035	0.0025
TP-DP-13	Crusher CR-1	0.63	0.629	0.0471
TP-DP-14	Conveyor C-6 into Conveyor C-7	0.15	0.073	0.0111
TP-DP-15	Screen S-2	0.65	0.220	0.0149
TP-DP-16	Conveyor C-11 into Conveyor C-5	0.03	0.014	0.0021
TP-DP-17	Conveyor C-8 into Conveyor C-10	0.15	0.072	0.0109
TP-DP-59	Conveyor C-68 into Conveyor C-10	0.06	0.027	0.0041
TP-DP-19	Conveyor C-4 into Conveyor C-10	0.03	0.012	0.0018
TP-DP-20	Conveyor C-10 into Splitter 1	0.15	0.072	0.0109
TP-DP-21	Splitter 1 into Conveyor C-12	0.12	0.057	0.0086
TP-DP-22	Twin Peaks Lime Silo	0.05	0.019	0.0187
TP-DP-23	Splitter 1 into Conveyor C-14	0.03	0.015	0.0023
TP-DP-24	Lime Silo into Conveyor C-14	0.06	0.028	0.0043
TP-DP-25	Conveyor C-14 into Conveyor C-15	0.06	0.028	0.0043
TP-DP-26	Conveyor C-15 into Conveyor C-26	0.06	0.028	0.0043
TP-DP-27	Conveyor C-26 into Limestone Stockpile	0.06	0.028	0.0043
TP-DP-28	Limestone Stockpile Loadout	0.06	0.028	0.0043
TP-DP-29	Loader into Hopper 2	0.00	0.0000035	0.0000035
TP-DP-30	Hopper 2 into Conveyor C-29	0.01	0.0054	0.0008
TP-DP-31	Conveyor C-29 into Conveyor C-14	0.01	0.0054	0.0008
TP-DP-32	Conveyor C-12 into Conveyor C-25	0.12	0.057	0.0086
TP-DP-33	Conveyor C-25 into Splitter 2	0.12	0.057	0.0086
TP-DP-34	Screen S-3	0.25	0.085	0.0058
TP-DP-35	Screen S-4	0.25	0.085	0.0058
TP-DP-36	Conveyor C-27 into Conveyor C-28	0.01	0.003	0.0004
TP-DP-37	Conveyor C-28 into Conveyor C-11	0.01	0.003	0.0004
TP-DP-38	Conveyor C-27 into Conveyor C-16	0.01	0.003	0.0004
TP-DP-39	Conveyor C-16 into Product Pile 3	0.01	0.003	0.0004
TP-DP-40	Product Pile 3 Loadout	0.01	0.003	0.0004
TP-DP-41	Conveyor C-17 into Conveyor C-20	0.04	0.018	0.0027
TP-DP-42	Conveyor C-20 into Product Pile 1	0.04	0.018	0.0027
TP-DP-43	Product Pile 1 Loadout	0.04	0.018	0.0027
TP-DP-44	Conveyor C-18 into Conveyor C-19	0.02	0.011	0.0016
TP-DP-45	Conveyor C-19 into Product Pile 2	0.02	0.011	0.0016
TP-DP-46	Product Pile 2 Loadout	0.02	0.011	0.0016
TP-DP-47	Conveyor C-21 into Conveyor C-23	0.01	0.0061	0.0009
TP-DP-48	Conveyor C-22 into Conveyor C-23	0.01	0.0061	0.0009
TP-DP-49	Conveyor C-23 into Conveyor C-24	0.03	0.012	0.0018
TP-DP-50	Conveyor C-24 into Product Pile 4	0.03	0.012	0.0018
TP-DP-51	Product Pile 4 Loadout	0.03	0.012	0.0018
Cotton Field Primary and Overland				
CF-DP1	Excavation of Cotton Field Pit	0.29	0.14	0.02
CF-DP2	Loader Feed to Grizzly F-2	0.00	0.00	0.00
CF-DP3	Crusher CR-2	0.18	0.08	0.01
CF-DP4	Grizzly F-2 into Conveyor C-30	0.21	0.10	0.01
CF-DP5	Conveyor C-30 into Conveyor C-31	0.29	0.14	0.02
CF-DP6	Conveyor C-31 to into Conveyor C-32	0.29	0.14	0.02
CF-DP7	Screen S-5	1.21	0.41	0.03
CF-DP8	Crusher CR-3	0.42	0.19	0.04
CF-DP9	Conveyor C-35 into Conveyor C-36	0.29	0.14	0.02
CF-DP10	Conveyor C-36 Conveyor C-37	0.29	0.14	0.02
CF-DP11	Conveyor C-37 Conveyor C-38	0.29	0.14	0.02
CF-DP12	Conveyor C-38 to Conveyor C-39	0.29	0.14	0.02
CF-DP13	Conveyor C-39 to Conveyor C-40	0.29	0.14	0.02
CF-DP14	Conveyor C-40 to Conveyor C-41	0.29	0.14	0.02
CF-DP15	Conveyor C-41 to Conveyor C-42	0.29	0.14	0.02
CF-DP16	Conveyor C-42 to Conveyor C-43	0.29	0.14	0.02
CF-DP17	Conveyor C-43 to Conveyor C-44	0.29	0.14	0.02
CF-DP18	Conveyor C-44 to Conveyor C-74	0.29	0.14	0.02
CF-DP21	Conveyor C-74 into Sand and Gravel Plant Feed Stockpile	0.29	0.14	0.02
Piles				
TP-Pile-1	1/2" Screen Fill Pile	2.53E-01	1.27E-01	1.92E-02
TP-Pile-2	Product Pile 1	7.76E-02	3.88E-02	5.87E-03
TP-Pile-3	Product Pile 2	7.30E-02	3.65E-02	5.53E-03
TP-Pile-4	Product Pile 3	8.24E-03	4.12E-03	6.24E-04
TP-Pile-7	Product Pile 4	3.88E-01	1.94E-01	2.94E-02
TP-Pile-8	Washed MA Fines Pile	6.83E-02	3.42E-02	5.17E-03
TP-Pile-9	Limestone Stockpile	6.75E-02	3.38E-02	5.11E-03
CF-Pile-1	Cotton Field Aggregate Storage Pile	3.72E-01	1.86E-01	2.81E-02

[1] Annual emissions for all emission sources were calculated based on the throughput information and the calculated emission factor, except for sources routed to fabric filter controls, which were calculated using the following equation:
Annual emissions (tpy) = Flow Rate (acfm) x Max Outlet Grain Loading (gr/acf) x 60 (min/hr) / 7000 (gr/lb) x Hours of Operation per Year / 2000 (lbs/ton)
Using the parameters below.

TP-DC1 Baghouse:

Max Outlet Grain Loading	0.004	(gr/dscf)	Historical outlet grain loading value revised based on vendor guarantee.
Stack Flow Rate	8395	(cfm)	Flow rate per the Facility's PTE workbooks provided by ADEQ on 8/21/2024.
Hours of Operation	4368	(hr/yr)	Per 8/13/2025 email, CalPortland proposes to operate a maximum of 4368 hours per year.

Using the conversion factors given below:
Using the conversion factors given below:

7000 gr/lb
2000 lb/ton
60 min/hr

[2] PM_{10} and $PM_{2.5}$ speciation profiles provided in CARB Profile 373 for Rock Crushers.

PM	1.00
PM_{10}	0.10
$PM_{2.5}$	0.075

Table 4c-1. Twin Peaks New Sources - Transfer Point Emission Factors and Parameters

Emission Point Number	Description	Annual Throughput [1] (tpy)	Control/Capture	Control Type	Particulate Control Efficiency (%)	Pre-Control Emission Factor [2,3,4] PM (lb/ton)	Pre-Control Emission Factor [2,3,4] PM_{10} (lb/ton)	Pre-Control Emission Factor [2,3,4] $PM_{2.5}$ (lb/ton)	Controlled Emission Factor PM (lb/ton)	Controlled Emission Factor PM_{10} (lb/ton)	Controlled Emission Factor $PM_{2.5}$ (lb/ton)
Manufactured Fines Plant											
MA-DP-1	Loader to Hopper 4	400,000	Control	Water-based Wet Suppression	90%	0.000016	0.000016	0.000016	0.000002	0.000002	0.000002
MA-DP-2	Hopper 4 to Conveyor C-45	400,000	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
MA-DP-3	Crusher CR-4	400,000	Capture	TP-DC1 Baghouse	Emissions Routed to Baghouse	Emissions routed to Baghouse.					
MA-DP-4	Screen S-6	400,000	Control	Water-based Wet Suppression	In emission factor	0.025000	0.008700	0.008700	0.002200	0.000740	0.000050
MA-DP-5	Conveyor C-70 to Conveyor C-69	360,000	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
MA-DP-6	Conveyor C-69 to Conveyor C-45	360,000	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
MA-DP-7	Conveyor C-71 to Conveyor C-72	400,000	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
MA-DP-8	Conveyor C-72 to Conveyor C-73	400,000	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
MA-DP-9	Conveyor C-73 into MA Fines Material Pile	400,000	Control	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037

[1] The annual throughput for each emission point was calculated by multiplying the throughput for the Manufactured Fines Plant of 400,000 tpy times the percentage of material processed through each each piece of equipment.

[2] The loader transfer emission factor was obtained from AP-42 Section 11.19.2 Table 11.19.2-2 for PM_{10} (Truck Unloading - Fragmented Stone). It is conservatively assumed that $PM_{10} = PM_{2.5}$

[3] Uncontrolled emission factors using the "drop equation" contained in AP-42, Section 13.2.4 (Aggregate Handling and Storage Piles), November 2006

$$E = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (pound [lb]/ton)}$$

Where:
- E = Emission factor (lb/ton)
- k = Particle size multiplier (dimensionless): PM 0.74; PM_{10} 0.35; $PM_{2.5}$ 0.053
- U = Mean wind speed (miles per hour [mph]) = 8.04. Per the surface wind speed data obtained from the Tucson Airport meteorological station published by ADEQ for the 2017-2021 period.
- M = Material moisture content (%) = 1.77 (Aggregate). Per moisture content of aggregate from AP-42 Table 11.12-2 footnote b.

[4] Screening emission factors from AP-42, Table 11.19.2-2 were used to represent the dewatering screens:

	PM	PM_{10}	$PM_{2.5}$	
Screening (uncontrolled)	0.025	0.0087	0.00870	$PM_{2.5}$ conservatively assumed to be equal to PM_{10}.
Screening (controlled)	0.0022	0.00074	0.0001	

Table 4c-2. Twin Peaks New Sources - Piles Emission Factors and Parameters

Emission Unit ID	Pile Description	Max. Stockpile Area (acre)	Silt Content (%)	f [1] %	Emission Factor [1,2] (lb/day/acre) PM	Emission Factor [1,2] (lb/day/acre) PM_{10}	Emission Factor [1,2] (lb/day/acre) $PM_{2.5}$
MA-Pile-1	MA Fines Material Pile	1.00	2.6	0.54	3.74E-01	1.87E-01	2.83E-02

[1] Emission factors for storage stockpiles per Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, EPA-450/2-92-004, September 1992.
The PM_{10} emission factor is half the PM emission.

$$EF = 1.7\left(\frac{s}{1.5}\right)\left(\frac{365-P}{235}\right)\left(\frac{f}{15}\right)$$

Where:
- EF = PM Emission factor (lb/day/acre)
- s = Silt Content (%), obtained from AP-42 Section 13.2.1 Table 13.2.1-3 for sand and gravel processing.
- f = % of time the unobstructed wind speed exceeds 12 mph at the stockpile height. Based on wind speed data obtained from the ADEQ AERMET data file for Tucson, AZ for the 2017 to 2021 period (anemometer height of 10 m) and has been adjusted for value at each pile height using the following equation:

$$\frac{U_{hub}}{U_{anem}} = \frac{\ln(z_{hub}/z_0)}{\ln(z_{anem}/z_0)}$$

Where:
- U_{hub} (m) = Adjusted wind speed at stockpile height
- z_0 (m) = Surface roughness length. Control of Open Fugitive Dust Sources - EPA (1988). 0.3 cm for overburden (used for aggregate piles) and 0.01 cm for ground coal (used for fines piles).
- z_{hub} (m) = Stockpile height
- z_{anem} (m)= Anemometer height
- P = Days per year with at least 0.01 inch precipitation (days) = 60. Based on AP-42 Figure 13.2.1-2.

[2] Per AP-42, Section 13.2.4, November 2006, the particle size multiplier used for calculating emission factors is as follows:
- PM_{10} = 0.35
- $PM_{2.5}$ = 0.053

Table 4c-3. New Manufactured Fines Plant - Road Emission Factors and Parameters

Emission Unit ID	Vehicle Type	Description	Averaging Period	Particulate Matter Emission Factor Inputs [1] k PM	k PM_{10}	k $PM_{2.5}$	W (ton)	s (%)	P (days/yr)	a PM	a PM_{10}	a $PM_{2.5}$	b PM	b PM_{10}	b $PM_{2.5}$	Uncontrolled Emission Factor [1] PM	PM_{10}	$PM_{2.5}$	Unit
MFP-RT-1	Caterpillar 988 Front End Loader	Loader Transfer from MA Fines Plant Feed to Hopper 4	Hourly/Daily	4.9	1.5	0.15	63.79	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45	10.21	2.60	0.26	lb/VMT
			Annual	-	-	-	63.79	4.8	60	-	-	-	-	-	-	8.53	2.17	0.22	lb/VMT

[1] Emission factors for vehicular traffic on unpaved roads per AP-42, Section 13.2.2 (Unpaved Roads), November 2006.

Short-Term $$E = k\,(s/12)^a(W/3)^b \quad (1a)$$

Annual $$E_{ext} = E\,[(365-P)/365] \quad (2)$$

Where:
- E = Size-specific emission factor (pound per vehicle mile traveled [lb/VMT]) (Per AP-42 Table 13.2.2-2, November 2006)
- k, a, b = Constants for equation 1a

	PM	PM_{10}	$PM_{2.5}$
k =	4.9	1.5	0.15
a =	0.7	0.9	0.9
b =	0.45	0.45	0.45

- s = Surface material silt content (%) = 4.8 (Silt content per U.S. AP-42 Table 13.2.2-1 for Sand and gravel processing plant roads.)
- W = Mean vehicle weight (tons)
- P = 60. Based on AP-42 Figure 13.2.1-2.

Table 4c-4. Twin Peaks - Material Processing and Handling PM Emissions

Emission Point Number	Description	Controlled Annual Emissions [1,2,3] (tpy)		
		PM	PM_{10}	$PM_{2.5}$
Manufactured Fines Plant				
MA-DP-1	Loader to Hopper 4	0.00	0.00	0.00
MA-DP-2	Hopper 4 to Conveyor C-45	0.10	0.05	0.01
MA-DP-3	Crusher CR-4	0.63	0.63	0.26
MA-DP-4	Screen S-6	0.44	0.15	0.01
MA-DP-5	Conveyor C-70 to Conveyor C-69	0.09	0.04	0.01
MA-DP-6	Conveyor C-69 to Conveyor C-45	0.09	0.04	0.01
MA-DP-7	Conveyor C-71 to Conveyor C-72	0.10	0.05	0.01
MA-DP-8	Conveyor C-72 to Conveyor C-73	0.10	0.05	0.01
MA-DP-9	Conveyor C-73 into MA Fines Material Pile	0.10	0.05	0.01
Piles				
MA-Pile-1	MA Fines Material Pile	3.88E-01	1.94E-01	2.94E-02
	Total	**2.06**	**1.26**	**0.34**

[1] Annual emissions for all emission sources were calculated based on the throughput information and the calculated emission factor, except for sources routed to fabric filter controls, which were calculated using the following equation:

Annual emissions (tpy) = Flow Rate (acfm) x Max Outlet Grain Loading (gr/scf) x 60 (min/hr) / 7000 (gr/lb) x Hours of Operation per Year / 2000 (lbs/ton)

Using the parameters below. Ther baghouse parameters will be the same as those of baghouse TP-DC1, per CalPortland email on 7/18/2025.

Max Outlet Grain Loading	0.004	(gr/dscf)	Calportland proposes to install a baghouse of same make/model as TP-DC1
Stack Flow Rate	8395	(cfm)	Calportland proposes to install a baghouse of same make/model as TP-DC1
Hours of Operation	4368	(hr/yr)	Per 8/13/2025 email, CalPortland proposes to operate a maximum of 4368 hours per year.

Using the conversion factors given below:

7000	gr/lb
2000	lb/ton
60	min/hr

[2] PM_{10} and $PM_{2.5}$ speciation profiles provided in CARB Profile 373 for Rock Crushers.

PM	1.00
PM_{10}	0.92
$PM_{2.5}$	0.411

Table 5a-1. Heating Value & Fugitive Emissions Comparison

Material	Heating Value [1,2] (Btu/ton)	Mass (ton)	Heat [3] (Btu)	Moisture Content [4] (%)	Mean Wind Speed [5] (mph)	Emission Factors [6,7]			Unit Emission Rate [8]		
						PM (lb/ton)	PM_{10} (lb/ton)	$PM_{2.5}$ (lb/ton)	PM (lb/ton equivalent)	PM_{10} (lb/ton equivalent)	$PM_{2.5}$ (lb/ton equivalent)
Fuels Authorized in Permit No. 85424											
Coal	24,034,000	2.03	48,837,600	8.15	8.04	6.14E-04	2.90E-04	4.40E-05	1.25E-03	5.90E-04	8.94E-05
Coke	28,526,000	1.71	48,837,600	7.34	8.04	7.11E-04	3.36E-04	5.09E-05	1.22E-03	5.76E-04	8.72E-05
Natural Gas	48,837,600	1.00	48,837,600	N/A	8.04	0.00	0.00	0.00	0.00	0.00	0.00
Diesel / No. 2 Fuel Oil	39,148,936	1.25	48,837,600	N/A	8.04	0.00	0.00	0.00	0.00	0.00	0.00
Bunker C Oil (No. 6 Fuel Oil)	38,297,872	1.28	48,837,600	N/A	8.04	0.00	0.00	0.00	0.00	0.00	0.00
Chopped Tires (< 6" x 6")	28,000,000	1.74	48,837,600	5	8.04	0.00	0.00	0.00	0.00	0.00	0.00
On-Specification Used Oil Fuel	39,148,936	1.25	48,837,600	N/A	8.04	0.00	0.00	0.00	0.00	0.00	0.00
Wood Chips	17,480,000	2.79	48,837,600	8	8.04	6.30E-04	2.98E-04	4.51E-05	1.76E-03	8.33E-04	1.26E-04
Jet Fuel	38,571,429	1.27	48,837,600	N/A	8.04	0.00	0.00	0.00	0.00	0.00	0.00
Examples of Non-Hazardous Secondary Materials Being Proposed as Additional Alternative Fuels											
Wood/cardboard/paper	16,081,600	3.04	48,837,600	8	8.04	6.30E-04	2.98E-04	4.51E-05	1.91E-03	9.05E-04	1.37E-04
Biosolids	10,390,000	4.70	48,837,600	5.6	8.04	1.04E-03	4.91E-04	7.44E-05	4.88E-03	2.31E-03	3.50E-04
Yard waste/Ag. Byproducts	8,250,000	5.92	48,837,600	29.84	8.04	9.98E-05	4.72E-05	7.15E-06	5.91E-04	2.79E-04	4.23E-05
Dust Collector Bags	N/A	N/A	N/A	N/A	8.04	0.00	0.00	0.00	0.00	0.00	0.00
Alternate Fuel with Maximum Unit Emission Rate			Biosolids						4.88E-03	2.31E-03	3.50E-04

[1] Coal and Coke heating values from May 2016 Standard Laboratories Coal and Coke Analysis, provided in Appendix D.

[2] Remaining fuel heating values from 40 CFR 98 Table C-1. For gas and liquid fuels (e.g., jet fuel) the HHV was converted to units of Btu/ton using the material densities in Appendix A to AP-42. For jet fuel, the density value was obtained from a San Diego County Air Pollution Control District (SDAPCD) reference document accessed at: https://www.sdapcd.org/content/dam/sdapcd/documents/permits/emissions-calculation/liquid-fuels/APCD-Turbine-Military-Aircraft-Jet-Fuel-Fired.pdf

[3] Heat (Btu) = Heating Value (Btu/ton) x Mass (ton). Amount needed to achieve current clinker capacity in Kiln 4.

[4] Coal and Coke Moisture Contents from May 2016 Standard Laboratories Coal and Coke Analysis. Wood chips moisture content per https://www.woodproducts.fi/content/moisture-properties-wood, consistent with the MPR application submitted by CalPortland in Fberuary 2025. Moisture content for chopped tires per the historical value approved by ADEQ for "Tire Chips" from the Facility's PTE workbooks provided by ADEQ on 8/21/2024.

[5] Mean wind speed value was obtained from the Tucson Airport meteorological station published by ADEQ for the 2017-2021 period.

[6] Emission Factors (lb/ton) = Particle Size Multiplier x 0.0032 x (Mean Wind Speed (mph)/5)^1.3 / (Material Moisture Content (%)/2)^1.4 per AP-42 Chapter 13.2.4, Equation 1.

[7] Emissions are not expected from dust collector bags

[8] Particulate Unit Emission Rate Emissions (lb/ton equivalent) = Emission Factor (lb/ton) x Equivalent Mass (tons)

Table 5a-2. Particle Size Multiplier [1]

PM	PM_{10}	$PM_{2.5}$
0.74	0.35	0.053

[1] Particle Size Multiplier from AP-42 Section 13.2.4 Aggregate Handling and Storage Piles page 13.2.4-4.

Table 5b-1. Clinker Bypass - Fabric Filter Emissions

Control Device ID	Emission Unit Controlled	Max Outlet Grain Loading (gr/dscf)	Stack Flow Rate (cfm)	Hours of Operation (hr/yr)	Temperature [1] (Rankine)	Pressure [2] (inHg)	Flow Rate [3] (dscfm)	Annual Emissions [4,5]		
								(tpy)	(tpy)	(tpy)
H2-DC2 Baghouse	H2-PF2-DG2 Triverter Gate Drop into Belt Conveyor H2-BC3	0.01	7500	8,760	709.67	29.89	5,338.38	Emissions accounted for under the H2-DC2 Baghouse included in the Minor Permit Revision application submitted in February 2025.		
H2-DC5 Baghouse	Belt Conveyor H2-BC3 into Belt Conveyor C2-BC8	0.005	1,800	8760	579.67	29.89	1,568.54	0.32	0.29	0.14
							Total	0.32	0.29	0.14

[1] The H2-DC2 baghouse temperature and pressure obtained from minor permit revison (MPR) application submitted by CalPortland to ADEQ on February 2025. The H2-DC8 baghouse values were assumed based on the values for a unit of the same size in the MPR.

[2] Pressure (inHg) based on actual site atmospheric conditions (https://www.timeanddate.com/weather/@z-us-85654/climate)

[3] Where Flow Rate (dscfm) = Flow Rate (acfm) x (Standard Temperature (Rankine) / Actual Exhaust Temperature (Rankine)) x (Actual Pressure (inHg) / Standard Pressure (inHg)) x (1 - Moisture of Ambient Air (%) / 100)

Standard Pressure (inHg)	29.92
Standard Temperature (Rankine)	519.67
Moisture Content Ambient Air (%)	2.7

[4] Hourly Emissions (lb/hr) = Flow Rate (acfm) x Max Outlet Grain Loading (gr/scf) x 60 (min/hr) / 7000 (gr/lb)

Annual emissions (tpy) = Short Term Emissions (tph) x Hours of Operation per Year / 2000 (lbs/ton)

Using the conversion factors given below:

7000	gr/lb
2000	lb/ton
60	min/hr

[5] PM_{10} speciation profiles provided in CARB Profile 343 for Cement production. Applicable $PM_{2.5}$ fraction provided in the Facility's PTE workbooks provided by ADEQ on 8/21/2024.

Weight Fraction of $PM_{2.5}$	0.441
Weight Fraction of PM_{10}	0.92
Weight Fraction of PM	1

Table 6a-1. New Concrete Batch Plant Stockpiles - Emissions

Pile Description	Max. Stockpile Area	Silt Content	f [1]	Emission Factor [1,2] (lb/day/acre)			Annual Emissions (tpy)		
	(acre)	(%)	(%)	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
Lightweight Rock Pile	0.29	2.6	0.53	1.36E-01	6.78E-02	4.07E-03	7.05E-03	3.53E-03	2.12E-04

Emission factors for storage stockpiles per Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, EPA-450/2-92-004, September 1992.

The PM_{10} emission factor is half the PM emission.

$$EF = 1.7\left(\frac{s}{1.5}\right)\left(\frac{365-P}{235}\right)\left(\frac{f}{15}\right)$$

Where:

EF = PM Emission factor (lb/day/acre)

s = Silt Content (%)

f = % of time the unobstructed wind speed exceeds 12 mph at the stockpile height

Based on wind speed data obtained from the ADEQ AERMET data file for Tucson, AZ for the 2017 to 2021 period (anemometer height of 10 m) and has been adjusted for value at each pile height using the following equation:

$$\frac{U_{hub}}{U_{anem}} = \frac{\ln(z_{hub}/z_0)}{\ln(z_{anem}/z_0)}$$

Where:

U_{hub} (m) = Adjusted wind speed at stockpile height

z_0 (m) Surface roughness length. Control of Open Fugitive Dust Sources - EPA (1988). 0.3 cm for overburden (used for aggregate pile)

z_{hub} (m) = Adjusted stockpile height

z_{anem} (m)= Anemometer height

P = Days per year with at least 0.01 inch precipitation (days)

60 Based on AP-42 Figure 13.2.1-2.

$PM_{2.5}$ speciation profiles provided in CARB Profile 3431 for concrete batching, accessed at: https://ww2.arb.ca.gov/consolidated-list-speciation-profiles.

Weight Fraction of $PM_{2.5}$	0.060
Weight Fraction of PM	1

Table 6b-1. Concrete Batch Plant - Batching Emission Factors and Parameters

Emission Source Description	Material	Annual Throughput (tpy)	Control Type	Particulate Capture/ Control Efficiency (%)	Uncontrolled Emission Factors [1]			Controlled Emission Factors		
					PM (lb/ton)	PM_{10} (lb/ton)	$PM_{2.5}$ (lb/ton)	PM (lb/ton)	PM_{10} (lb/ton)	$PM_{2.5}$ (lb/ton)
Transfer to Lightweight Rock Pile	Lightweight Rock	1,500	None	0%	0.00521	0.00246	0.00037	0.005209	0.002464	0.000373
Lightweight Rock Pile Loadout	Lightweight Rock	1,500	Pile Watering	90%	0.00521	0.00246	0.00037	0.000521	0.000246	0.000037
Sand Transfer from Loader Into Hopper H-1	Sand	203,580	Inherent, Wet Material	In Emission Factor	0.00063	0.00030	0.00005	0.000630	0.000298	0.000045
Aggregate Transfer from Loader Into Hopper H-2	Aggregate	224,640	Inherent, Wet Material	In Emission Factor	0.00063	0.00030	0.00005	0.000630	0.000298	0.000045
Aggregate Transfer from Loader Into Hopper H-3										
Aggregate Transfer from Loader Into Hopper H-4										
Aggregate Transfer into Overhead Aggregate Bin (4 Compartments)	Aggregate	224,640	Full Enclosure	100%	0.00063	0.00030	0.00005	0	0	0
Sand Transfer into Overhead Aggregate Bin (4 Compartments)	Sand	203,580	Full Enclosure	100%	0.00063	0.00030	0.00005	0	0	0
Sand Transfer into Aggregate Weigh Hopper (4 bins)	Sand	203,580	Inherent, Wet Material	In Emission Factor	0.00063	0.00030	0.00005	0.000630	0.000298	0.000045
Aggregate Transfer into Aggregate Weigh Hopper (4 bins)	Aggregate	224640	Inherent, Wet Material	In Emission Factor	0.00063	0.00030	0.00005	0.000630	0.000298	0.000045
BP-S-1 Loading	Cement	N/A	Capture	100%	Emissions routed to BP-BH-1					
BP-S-2 Loading	Flyash	N/A	Capture	100%	Emissions routed to BP-BH-2					
BP-S-3 Loading	Pozzolan	N/A	Capture	100%	Emissions routed to BP-BH-3					
BP-S-4 Super Silo Loading	Cement	N/A	Capture	100%	Emissions routed to BP-BH-4					
Horizontal Guppy Loading	Pozzolan	N/A	Capture	100%	Emissions Routed to BP-DC-1					
Gravity Feeding from Silos into Cementitious Material Weigh Batcher	Silo Materials	N/A	Capture	100%	Emissions Routed to BP-DC-1					
Material Transfer into Central Mixer	Ready Mix Concrete	561,600	Capture	100%	Emissions Routed to BP-DC-1					

[1] Uncontrolled emission factors using the "drop equation" contained in AP-42, Section 13.2.4 (Aggregate Handling and Storage Piles), November 2006, as follows:

$$E = k(0.0032)\ \frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}\ \text{(pound [lb]/ton)}$$

Where:

E = Emission factor (lb/ton)

k = Particle size multiplier (dimensionless)

PM	PM_{10}	$PM_{2.5}$
0.74	0.35	0.053

U = Mean wind speed (miles per hour [mph]) 8.039

Per the surface wind speed data obtained from the Tucson Airport meteorological station published by ADEQ for the 2017-2021 period.

M = Material moisture content (%)

Aggregate	Dewatered Fines
1.77	8.00

Aggregate moisture content obtained from AP-42 Table 11.12-2 footnote b. Dewatered fines moisture content based on wash plant product specifications

Table 6b-2. Concrete Batch Plant - Batching PM Emissions

Emission Source Description	Controlled Annual Emissions (tpy)		
	PM	PM_{10}	$PM_{2.5}$ [1]
Transfer to Lightweight Rock Pile	0.0039	0.0018	0.000280
Lightweight Rock Pile Loadout	0.00039	0.00018	0.000028
Sand Transfer from Loader Into Hopper H-1	0.06	0.030	0.0046
Aggregate Transfer from Loader Into Hopper H-2	0.07	0.033	0.0051
Aggregate Transfer from Loader Into Hopper H-3			
Aggregate Transfer from Loader Into Hopper H-4			
Aggregate Transfer into Overhead Aggregate Bin (4 Compartments)	0	0	0
Sand Transfer into Overhead Aggregate Bin (4 Compartments)	0	0	0
Sand Transfer into Aggregate Weigh Hopper (4 bins)	0.06	0.030	0.0046
Aggregate Transfer into Aggregate Weigh Hopper (4 bins)	0.07	0.033	0.0051
BP-S-1 Loading	Emissions routed to BP-BH-1		
BP-S-2 Loading	Emissions routed to BP-BH-2		
BP-S-3 Loading	Emissions routed to BP-BH-3		
BP-S-4 Super Silo Loading	Emissions routed to BP-BH-4		
Horizontal Guppy Loading	Emissions Routed to BP-DC-1		
Gravity Feeding from Silos into Cementitious Material Weigh Batcher	Emissions Routed to BP-DC-1		
Material Transfer into Central Mixer	Emissions Routed to BP-DC-1		
Total	**0.27**	**0.13**	**0.02**

Table 6b-3. Concrete Batch Plant - HAP Emissions

Pollutant	Cement Silo Filling [2]	Cement Supplement (Fly Ash) Silo Filling [2]	Central Mix Batching (cement & flyash) [2]	Individual HAP Emissions [3]	
	(lb/ton cement)	(lb/ton cement supplement)	(lb/ton of cement and cement supplement)	(lbs/yr)	(ton/yr)
Arsenic	4.24E-09	1.00E-06	2.96E-07	1.11E-01	5.56E-05
Beryllium	4.86E-10	9.04E-08	0.00E+00	7.75E-03	3.88E-06
Cadmium	0.00E+00	1.98E-10	7.10E-10	7.79E-05	3.89E-08
Total Chromium	2.90E-08	1.22E-06	1.27E-07	1.16E-01	5.78E-05
Lead	1.09E-08	5.20E-07	3.66E-08	4.77E-02	2.39E-05
Manganese	1.17E-07	2.56E-07	3.78E-06	3.46E-01	1.73E-04
Nickel	4.18E-08	2.28E-06	2.48E-07	2.17E-01	1.08E-04
Total Phosphorus	0.00E+00	3.54E-06	1.20E-06	4.07E-01	2.03E-04
Selenium	0.00E+00	7.24E-08	0.00E+00	6.21E-03	3.11E-06
			Total	**1.26**	**6.29E-04**

[1] AP-42, Table 11.12-8 Concrete Batch Plant Metal Emission Factors. For central mix batching, no data is provided for beryllium or selenium so the factors for truck loading values with fabric filter were conservatively used for those pollutants.

[2] Conservatively used emission factors for silos and central mix batching controlled with a fabric filter.

[3] Silo filling emissions were conservatively calculated using the higher of the cement silo filling and cement supplement silo filling emission factors and the total annual throughput for cement and cementitious material additives, while central mix batching emissions are calculated with the relevant emission factors and the total annual throughput for cement and cementitious material additives.

Table 6c-1. Concrete Batch Plant - Fabric Filter Emissions

Control Device Description	Max Outlet Grain Loading (gr/dscf)	Stack Flow Rate (cfm)	Hours of Operation (hr/yr)	Annual Emissions [1,2,3]		
				PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Silo Baghouse BP-BH-1	0.002	2,340	3744	0.08	0.03	0.00
Silo Baghouse BP-BH-2	0.002	2,340	3744	0.08	0.03	0.00
Silo Baghouse BP-BH-3	0.002	2,340	3744	0.08	0.03	0.00
Silo Baghouse BP-BH-4	0.002	2,340	3744	0.08	0.03	0.00
Dust Collector BP-DC-1	0.002	10,000	3744	0.32	0.13	0.02
			Total	0.62	0.25	0.04

[1] Hourly Emissions (lb/hr) = Flow Rate (acfm) x Max Outlet Grain Loading (gr/scf) x 60 (min/hr) / 7000 (gr/lb)

[2] Annual emissions (tpy) = Short Term Emissions (tph) x Hours of Operation per Year / 2000 (lbs/ton)

Using the conversion factors given below:

7000 grains/lb

2000 lb/ton

60 min/hr

[3] PM speciation profiles provided in CARB Profile 3431 for concrete batching, accessed at: https://ww2.arb.ca.gov/consolidated-list-speciation-profiles.

$PM_{2.5}$= 0.060 /PM

PM_{10} = 0.4 /PM

Table 6d-1. Concrete Batch Plant - Road Emission Factors (Unpaved)

Vehicle Type	Description	Averaging Period	Particulate Matter Emission Factor Inputs [1]												Uncontrolled Emission Factor [1]			
			k			W	s	P	a			b						
			PM	PM_{10}	$PM_{2.5}$	(ton)	(%)	(days/yr)	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	Unit
Caterpillar 988 Front End Loader	Loader to and from Concrete Batch Plant Parking Area	Hourly/Daily	4.9	1.5	0.15	56.29	5.5	60	0.7	0.9	0.9	0.45	0.45	0.45	10.62	2.78	0.28	lb/VMT
		Annual	-	-	-	56.29	5.5	60	-	-	-	-	-	-	8.87	2.32	0.23	lb/VMT
Caterpillar 988 Front End Loader	Loader Transfer from Feed Piles to Aggregate Hoppers	Hourly/Daily	4.9	1.5	0.15	63.79	5.5	60	0.7	0.9	0.9	0.45	0.45	0.45	11.23	2.94	0.29	lb/VMT
		Annual	-	-	-	63.79	5.5	60	-	-	-	-	-	-	9.39	2.46	0.25	lb/VMT

[1] Emission factors for vehicular traffic on unpaved roads per AP-42, Section 13.2.2 (Unpaved Roads), November 2006.

Short-Term $$E = k\,(s/12)^a (W/3)^b \quad (1a)$$

Annual $$E_{ext} = E\,[(365 - P)/365] \quad (2)$$

Where:

E = Size-specific emission factor (pound per vehicle mile traveled [lb/VMT])
(Per AP-42 Table 13.2.2-2, November 2006)

k, a, b = Constants for equation 1a

	PM	PM_{10}	$PM_{2.5}$
k =	4.9	1.5	0.15
a =	0.7	0.9	0.9
b =	0.45	0.45	0.45

s = Surface material silt content (%) 5.5
(Silt content per U.S. AP-42 Table 13.2.1-3 for concrete batching.)

W = Mean vehicle weight (tons)

P = 60 Days per year with at least 0.01 inch precipitation per AP-42 Figure 13.2.1-2.

Table 6d-2. Concrete Batch Plant - Road Emission Factors (Paved)

Vehicle Type	Description	Averaging Period	Particulate Matter Emission Factor Inputs [1]							Uncontrolled Emission Factor [1]			
			k			W	sL	P	P units				
			PM	PM_{10}	$PM_{2.5}$	(ton)	g/m^2			PM	PM_{10}	$PM_{2.5}$	Unit
Articulated Truck	Powder Train Travel Segment	Hourly	0.011	0.0022	0.00054	28.25	5.5	1440	hours	1.26	0.25	0.06	lb/VMT
		Annual	0.011	0.0022	0.00054	28.25	5.5	60	days	1.50	0.30	0.07	lb/VMT
Mixer Truck	Mixer Truck to and from Concrete Batch Plant	Hourly	0.011	0.0022	0.00054	20.00	5.5	1440	hours	0.88	0.18	0.04	lb/VMT
		Annual	0.011	0.0022	0.00054	20.00	5.5	60	days	1.06	0.21	0.05	lb/VMT
Mixer Truck	Mixer Truck Loading Travel Segment	Hourly	0.011	0.0022	0.00054	30.00	5.5	1440	hours	1.34	0.27	0.07	lb/VMT
		Annual	0.011	0.0022	0.00054	30.00	5.5	60	days	1.60	0.32	0.08	lb/VMT

[1] Emission factors for vehicular traffic on paved roads per AP-42, Section 13.2.1 (Paved Roads), January 2011.

Hourly $$E_{ext} = [\,k\,(sL)^{0.91} \times (W)^{1.02}\,]\,(1 - 1.2P/N) \quad (3)$$

Annual $$E_{ext} = [\,k\,(sL)^{0.91} \times (W)^{1.02}\,]\,(1 - P/4N) \quad (2)$$

Where:

E_{ext} = Size-specific emission factor (pound per vehicle mile traveled [lb/VMT])

k = Constants for equation 2 and 3

PM	PM_{10}	$PM_{2.5}$
0.011	0.0022	0.00054

sL = Surface material silt content (%) 5.5
(Silt content per U.S. AP-42 Table 13.2.1-3 for concrete batching.)

W = Mean vehicle weight (tons)

P = 60 Days per year with at least 0.01 inch precipitation per AP-42 Figure 13.2.1-2.

N = The number of hours (8,760) or days (365) in an averaging period.

Table 15a. Pre-Project PTE for Roads

Road Segment	VMTs/yr	Uncontrolled Annual Emission Factor (lb/VMT)			Control Efficiency	Annual PTE (tpy)		
		PM	PM_{10}	$PM_{2.5}$	(%)	PM	PM_{10}	$PM_{2.5}$
Twin Peaks Rock and Stone Plant								
Loader Transfer from Aggregate Plant Feed Stockpile to Hopper 1	1,988.39	8.53	2.17	0.22	65%	2.97	0.76	0.08
Loader Transfer from Aggregate Plant Finished Stockpiles to Customer Trucks	745.65	7.30	1.86	0.19	65%	0.95	0.24	0.02
Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant - Segment 1	0.00	--	--	--	--	--	--	--
Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant - Segment 2	19,342	5.91	1.51	0.15	65%	20.02	5.10	0.51
Cotton Field Primary and Overland								
Loader Travel from Equipment Parking to Pit	524.74	8.07	2.06	0.21	65%	0.74	0.19	0.02
Loader Transfer from Cotton Field Pit Face to Grizzly F-2	10,074.50	8.53	2.17	0.22	65%	15.04	3.83	0.38
Manufactured Fines Plant								
Loader Transfer from MA Fines Plant Feed to Hopper 4	0	--	--	--	--	--	--	--
Wash Plant								
Loader Transfer from Feed Piles to Hopper 5	0	--	--	--	--	--	--	--
Loader from Wash Plant Stockpiles to Customer Trucks	0	--	--	--	--	--	--	--
Loader from Wash Plant Stockpiles to Secondary Stockpiles	0	--	--	--	--	--	--	--
Customer Truck Travel to and from the Wash Plant - Segment 1	0	--	--	--	--	--	--	--
Customer Truck Travel to and from the Wash Plant - Segment 2	0	--	--	--	--	--	--	--
Concrete Batch Plant								
Loader to and from Concrete Batch Plant Parking Area	0	--	--	--	--	--	--	--
Loader Transfer from Feed Piles to Aggregate Hoppers	0	--	--	--	--	--	--	--
Powder Train Travel Segment	0	--	--	--	--	--	--	--
Mixer Truck to and from Concrete Batch Plant Entrance to Parking Area	0	--	--	--	--	--	--	--
Mixer Truck Loading Travel Segment	0	--	--	--	--	--	--	--
					Road Emissions [2]	**39.72**	**10.12**	**1.01**

[1] Control factor used based on the water application intensity and frequency for current unpaved road segments traveled, as documented in the facility's current dust control plan.
[2] A.A.C. R18-2-301.15(e)(iii) states that all roads constitute a single emissions unit.

Table 15b. Post-Project PTE for Roads

Road Segment	VMTs/yr	Uncontrolled Annual Emission Factor (lb/VMT)			Control Efficiency [1]	Annual PTE (tpy)		
		PM	PM_{10}	$PM_{2.5}$	(%)	PM	PM_{10}	$PM_{2.5}$
Twin Peaks Rock and Stone Plant								
Loader Transfer from Aggregate Plant Feed Stockpile to Hopper 1	2,734.03	8.53	2.17	0.22	85%	1.70	0.43	0.04
Loader Transfer from Aggregate Plant Finished Stockpiles to Customer Trucks	1,025.26	7.30	1.86	0.19	85%	0.55	0.14	0.01
Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant - Segment 1	17,730.50	1.90	0.38	0.09	90%	1.68	0.34	0.08
Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant - Segment 2	8,865.25	5.91	1.51	0.15	85%	3.82	0.97	0.10
Cotton Field Primary and Overland								
Loader Travel from Equipment Parking to Pit	524.74	8.07	2.06	0.21	85%	0.31	0.08	0.01
Loader Transfer from Cotton Field Pit Face to Grizzly F-2	8,333.33	8.53	2.17	0.22	85%	5.18	1.32	0.13
Manufactured Fines Plant								
Loader Transfer from MA Fines Plant Feed to Hopper 4	5,050.51	8.53	2.17	0.22	85%	3.14	0.80	0.08
Wash Plant								
Loader Transfer from Feed Piles to Hopper 5	473.48	8.53	2.17	0.22	85%	0.29	0.07	0.01
Loader from Wash Plant Stockpiles to Customer Trucks	820.21	7.30	1.86	0.19	85%	0.44	0.11	0.01
Loader from Wash Plant Stockpiles to Secondary Stockpiles	6,753.06	7.30	1.86	0.19	85%	3.59	0.91	0.09
Customer Truck Travel to and from the Wash Plant - Segment 1	14,184.40	1.90	0.38	0.09	90%	1.34	0.27	0.07
Customer Truck Travel to and from the Wash Plant - Segment 2	7,092.20	5.91	1.51	0.15	85%	3.05	0.78	0.08
Concrete Batch Plant								
Loader to and from Concrete Batch Plant Parking Area	112.32	8.87	2.32	0.23	85%	0.07	0.02	0.00
Loader Transfer from Feed Piles to Aggregate Hoppers	5,406.82	9.39	2.46	0.25	85%	3.69	0.97	0.10
Powder Train Travel Segment	829.64	1.50	0.30	0.07	90%	0.06	0.01	0.00
Mixer Truck to and from Concrete Batch Plant Entrance to Parking Area	1,477.27	1.06	0.21	0.05	90%	0.08	0.02	0.00
Mixer Truck Loading Travel Segment	6,381.82	1.60	0.32	0.08	90%	0.51	0.10	0.03
					Road Emissions [2]	**29.50**	**7.34**	**0.84**

[1]

Unpaved Roads	A control factor of	74%	is applied for watering of unpaved roads and use of chemical dust suppressants per the WRAP Fugitive Dust Handbook (September 2006). The roads will be watered sufficiently to achieve this control efficiency.
	A control factor of	44%	is applied based on limiting vehicle speeds on unpaved roads to 25 mph per the WRAP Fugitive Dust Handbook (September 2006).
	Combined control efficiency	85%	was calculated for unpaved road segments which only have water applied per the WRAP Fugitive Dust Handbook (September 2006), and which limit vehicle speeds to 25 mph .
Paved Roads	Remove deposits on roa	90%	is applied based on regular sweeping per the WRAP Fugitive Dust Handbook (September 2006).

[2] A.A.C. R18-2-301.15(e)(iii) states that all of the roadways located at a stationary source constitute a single emissions unit.

Table 6a. BAE Evaluation for Project Affected Units

Pollutant	**Sum From All Units/Processes Affected by Project (tons)**					**Consecutive 24-month emissions Average (tons)** [1]			
Start Month	January	January	January	January	January				
End Month	December	December	December	December	December				
Year	**2020**	**2021**	**2022**	**2023**	**2024**	**2020 - 2021**	**2021 - 2022**	**2022 - 2023**	**2023 - 2024**
PM	16.91	22.06	39.55	52.25	49.42	19.49	30.81	45.90	50.83
PM_{10}	11.16	9.95	24.49	29.09	24.47	10.55	17.22	26.79	26.78
$PM_{2.5}$	6.49	6.19	13.82	15.15	11.46	6.34	10.01	14.49	13.31

[1] BAE calculated pursuant to Arizona Administrative Code, Title 18, Chapter 2, Article 1, R18-2-401.2.

Table 6b-1. Kiln Monthly CEMS Emissions From January 2020 to February 2025

Month	Year	Clinker Produced [1] (ton/month)	Monthly Emissions (lb/month) [2]			CEMS Emission Factor (lb/ton clinker) [3]		
			NO_x	CO	VOC	NO_x	CO	VOC
1	2020	88,486.00	262,614.41	213,807.61	1,143.70	2.97	2.42	0.01
2	2020	93,793.00	270,175.11	248,161.92	1,052.85	2.88	2.65	0.01
3	2020	83,692.00	264,741.23	213,565.94	1,053.09	3.16	2.55	0.01
4	2020	91,993.00	254,377.81	364,172.42	1,266.88	2.77	3.96	0.01
5	2020	102,800.00	268,877.24	641,527.59	4,472.62	2.62	6.24	0.04
6	2020	95,261.00	305,101.80	429,958.77	4,224.55	3.20	4.51	0.04
7	2020	105,370.00	326,130.67	784,891.47	6,293.92	3.10	7.45	0.06
8	2020	82,780.00	268,953.37	522,793.45	1,871.44	3.25	6.32	0.02
9	2020	97,450.00	280,256.86	405,020.94	2,249.83	2.88	4.16	0.02
10	2020	99,375.00	321,915.54	449,110.98	2,312.98	3.24	4.52	0.02
11	2020	64,142.00	190,545.83	363,861.01	1,013.66	2.97	5.67	0.02
12	2020	78,843.00	219,413.30	514,958.80	1,338.44	2.78	6.53	0.02
1	2021	98,812.00	261,768.26	474,584.78	1,773.70	2.65	4.80	0.02
2	2021	89,331.00	268,672.11	476,620.75	2,182.34	3.01	5.34	0.02
3	2021	69,990.00	212,259.44	338,442.02	1,189.91	3.03	4.84	0.02
4	2021	78,215.00	235,045.52	466,484.25	2,803.62	3.01	5.96	0.04
5	2021	109,860.00	348,005.72	681,618.66	2,160.34	3.17	6.20	0.02
6	2021	89,385.00	290,659.40	301,689.01	1,394.09	3.25	3.38	0.02
7	2021	103,267.00	302,730.39	459,462.93	1,939.28	2.93	4.45	0.02
8	2021	94,308.00	192,894.61	320,877.37	672.18	2.05	3.40	0.01
9	2021	104,538.00	311,350.15	530,715.93	3,155.42	2.98	5.08	0.03
10	2021	100,974.00	333,368.30	457,017.96	1,598.16	3.30	4.53	0.02
11	2021	78,034.00	244,576.61	236,719.21	1,625.32	3.13	3.03	0.02
12	2021	101,076.00	307,415.58	507,124.79	2,572.32	3.04	5.02	0.03
1	2022	97,598.00	312,930.28	395,133.38	1,917.59	3.21	4.05	0.02
2	2022	104,378.00	283,540.95	520,634.15	2,003.48	2.72	4.99	0.02
3	2022	78,330.00	228,032.38	494,026.09	1,137.53	2.91	6.31	0.01
4	2022	95,589.00	256,810.64	422,523.82	1,228.58	2.69	4.42	0.01
5	2022	48,971.00	145,659.33	170,971.16	217.09	2.97	3.49	0.00
6	2022	72,619.00	212,956.20	287,418.45	1,403.36	2.93	3.96	0.02
7	2022	101,365.00	292,364.01	238,782.83	1,035.76	2.88	2.36	0.01
8	2022	103,529.00	288,330.34	450,232.16	1,203.05	2.79	4.35	0.01
9	2022	93,197.00	287,953.32	354,183.02	1,085.27	3.09	3.80	0.01
10	2022	102,823.00	306,216.51	434,746.25	950.61	2.98	4.23	0.01
11	2022	92,017.00	287,672.52	425,480.20	882.42	3.13	4.62	0.01
12	2022	88,885.00	273,198.48	711,672.66	997.45	3.07	8.01	0.01
1	2023	95,520.00	295,962.64	831,796.82	914.44	3.10	8.71	0.01
2	2023	96,688.00	270,963.91	590,327.56	1,482.05	2.80	6.11	0.02
3	2023	108,101.00	332,750.70	558,551.88	1,552.33	3.08	5.17	0.01
4	2023	75,572.00	242,851.02	404,406.09	982.76	3.21	5.35	0.01
5	2023	103,789.00	305,826.59	997,515.26	2,629.56	2.95	9.61	0.03
6	2023	107,276.00	310,309.77	739,834.72	1,551.42	2.89	6.90	0.01
7	2023	95,933.00	326,305.90	755,421.02	2,148.96	3.40	7.87	0.02
8	2023	98,720.00	288,881.73	715,531.72	1,987.14	2.93	7.25	0.02
9	2023	90,874.00	285,736.00	768,984.00	1,794.82	3.14	8.46	0.02
10	2023	18,429.00	89,718.00	68,914.00	160.76	4.87	3.74	0.01
11	2023	79,863.00	248,242.00	200,374.00	1,314.39	3.11	2.51	0.02
12	2023	107,787.00	322,078.00	461,678.00	1,597.39	2.99	4.28	0.01
1	2024	98,547.00	320,710.00	319,766.00	1,474.02	3.25	3.24	0.01
2	2024	88,990.00	278,702.00	393,632.00	1,464.28	3.13	4.42	0.02
3	2024	89,509.00	298,940.00	318,824.00	1,235.22	3.34	3.56	0.01
4	2024	98,964.00	319,942.00	492,370.00	1,204.34	3.23	4.98	0.01
5	2024	98,172.00	300,328.00	712,680.00	1,190.32	3.06	7.26	0.01
6	2024	79,626.00	266,074.00	610,334.00	1,320.37	3.34	7.67	0.02
7	2024	82,390.00	151,330.00	169,908.00	1,218.85	1.84	2.06	0.01
8	2024	94,509.00	300,842.70	265,759.71	2,927.37	3.18	2.81	0.03
9	2024	66,732.00	216,375.72	216,804.48	1,341.55	3.24	3.25	0.02
10	2024	97,909.00	317,186.25	185,647.51	1,416.53	3.24	1.90	0.01
11	2024	81,686.00	255,545.75	68,651.13	249.56	3.13	0.84	0.00
12	2024	83,534.00	271,556.34	114,134.23	701.64	3.25	1.37	0.01
1	2025	52,043.00	178,710.51	31,029.32	704.30	3.43	0.60	0.01
2	2025	69,151.00	216,543.13	33,137.74	914.71	3.13	0.48	0.01

[1] Clinker production data for 01/ 2020 through 07/2024 was obtained from the minor permit revision (MPR) application submitted by CalPortland to ADEQ on 02/2025, while data for 8/2024 thorugh 2/2025 was provided by CalPortland on 4/25/2025.

[2] A NO_x, CO, and VOC CEMS is used to measure emissions of the respective pollutants. The CEMS system returns calculated daily emissions on a lb/ton production or a lb/day basis. Monthly NOx, CO, and VOC emissions are calculated as the sum of daily NOx, CO, and VOC emissions. CEMS data for the period from 01/2020 through 07/2024 was obtained from the MPR application submitted by CalPortland to ADEQ on 02/2025, while data for 8/2024 thorugh 2/2025 was provided by CalPortland on 4/25/2025.

[3] CEMS emission factors for NOx, CO, and VOC (lb/ton clinker produced) are calculated using the monthly clinker throughout and monthly emissions.

Table 6b-2. Kiln Gaseous Baseline Actual Emissions Determination [1]

Period Start	24-month Time Period End	BAE Determination (tpy)			Average Clinker Production (tpy)
		NO_x	CO	VOC	
Jan-20	Dec-21	1,635.5	2,600.8	12.8	1,100,888
Feb-20	Jan-22	1,648.0	2,646.1	13.0	1,105,444
Mar-20	Feb-22	1,651.4	2,714.2	13.3	1,110,736
Apr-20	Mar-22	1,642.2	2,784.4	13.3	1,108,055
May-20	Apr-22	1,642.8	2,798.9	13.3	1,109,853
Jun-20	May-22	1,612.0	2,681.3	12.2	1,082,939
Jul-20	Jun-22	1,589.0	2,645.7	11.5	1,071,618
Aug-20	Jul-22	1,580.5	2,509.1	10.2	1,069,615
Sep-20	Aug-22	1,585.4	2,491.0	10.0	1,079,990
Oct-20	Sep-22	1,587.3	2,478.3	9.7	1,077,863
Nov-20	Oct-22	1,583.4	2,474.7	9.4	1,079,587
Dec-20	Nov-22	1,607.7	2,490.1	9.4	1,093,525
Jan-21	Dec-22	1,621.1	2,539.3	9.3	1,098,546
Feb-21	Jan-23	1,629.7	2,628.6	9.1	1,096,900
Mar-21	Feb-23	1,630.2	2,657.0	8.9	1,100,578
Apr-21	Mar-23	1,660.3	2,712.0	9.0	1,119,634
May-21	Apr-23	1,662.3	2,696.5	8.5	1,118,312
Jun-21	May-23	1,651.8	2,775.5	8.6	1,115,277
Jul-21	Jun-23	1,656.7	2,885.0	8.7	1,124,222
Aug-21	Jul-23	1,662.6	2,959.0	8.7	1,120,555
Sep-21	Aug-23	1,686.6	3,057.7	9.1	1,122,761
Oct-21	Sep-23	1,680.2	3,117.3	8.7	1,115,929
Nov-21	Oct-23	1,619.2	3,020.2	8.4	1,074,657
Dec-21	Nov-23	1,620.2	3,011.1	8.3	1,075,571
Jan-22	Dec-23	1,623.8	2,999.8	8.0	1,078,927
Feb-22	Jan-24	1,625.8	2,980.9	7.9	1,079,401
Mar-22	Feb-24	1,624.6	2,949.2	7.8	1,071,707
Apr-22	Mar-24	1,642.3	2,905.4	7.8	1,077,297
May-22	Apr-24	1,658.1	2,922.9	7.8	1,078,984
Jun-22	May-24	1,696.7	3,058.3	8.1	1,103,585
Jul-22	Jun-24	1,710.0	3,139.0	8.0	1,107,088
Aug-22	Jul-24	1,674.8	3,121.8	8.1	1,097,601
Sep-22	Aug-24	1,677.9	3,075.7	8.5	1,093,091
Oct-22	Sep-24	1,660.0	3,041.3	8.6	1,079,858
Nov-22	Oct-24	1,662.7	2,979.1	8.7	1,077,401
Dec-22	Nov-24	1,654.7	2,889.8	8.5	1,072,236
Jan-23	Dec-24	1,654.3	2,740.5	8.5	1,069,560
Feb-23	Jan-25	1,625.0	2,540.3	8.4	1,047,822
Mar-23	Feb-25	1,611.4	2,401.0	8.3	1,034,053
24-month Annual Average BAE (tpy):		1,710	3,139	13	
Corresponding 24-Month Time Period:		Jul 2022-Jun 2024	Jul 2022-Jun 2024	Apr 2020-Mar 2022	
BAE Emission Factor (lb/ton):		3.089	5.671	0.024	

[1] BAE calculated pursuant to Arizona Administrative Code, Title 18, Chapter 2, Article 1, R18-2-401.2.

Table 6b-3. Kiln Gaseous Projected Actual Emissions (PAE) [1]

Projected Clinker Production[2] (tpy)	PAE EF[3] (lb/ton clinker produced)			PAE (tpy)[3]		
	NO_x	CO	VOC	NO_x	CO	VOC
1,175,000	3.09	5.67	0.02	1,815	3,332	14

[1] PAE calculated pursuant to Arizona Administrative Code, Title 18, Chapter 2, Article 1, R18-2-401.23. and 40 CFR 52.21.

[2] Projected clinker production in tons per year provided by Andrew Estrella (CalPortland) in a 6/10/2025 email to Trinity.

[3] PAE Emissions (tpy) = PAE Emission Factor (lb/ton) x Projected Clinker Production (ton/year) / 2000 (lb/ton)

Table 6b-4. Kiln Gaseous Could Have Accommodated (CHA) Emissions [1]

Pollutant	Baseline Period Clinker Production[2] (tpy)	CHA Clinker Production[3] (tpy)	Emission Factor[4] (lb/ton)	CHA Emissions[5] (tons/year)
NO_x	1,107,088	190,124	3.089	293.7
CO	1,107,088	190,124	5.671	539.1
VOC	1,108,055	210,265	0.024	2.5

[1] CHA Emissions calculated pursuant to Arizona Administrative Code, Title 18, Chapter 2, Article 1, R18-2-401.23 and 40 CFR 52.21.

[2] Refer to Table 6b-1 for corresponding clinker production during the respective baseline period selected for the relevant pollutant.

[3] The kiln's CHA capacity, was evaluated using the highest monthly production rate achieved during the baseline period.The theoretical maximum annual output was calculated as 12 multiplied by this peak monthly rate, as restricted to the legally allowable limit. The accommodated production rate—representing the additional output achievable within compliance—is derived by subtracting the baseline production rate from this permitted maximum.

[4] Refer to Table 6b-2 for BAE emission factor used in CHA emission calculations.

[5] CHA Emissions (tpy) = CHA Clinker Production (ton clinker/year) x BAE Emission Factor (lb pollutant/ton clinker) / 2,000 (lb/ton)

Table 6b-5. Kiln 4 Pre Project and Post Project Potential to Emit Emissions[1]

Pollutant	Clinker Production[2] (tph)	Emissions (tpy)[3]
VOC	207	9.07
NO_x		5,144.00
CO		5,069.00

[1] Pre Project PTE is equal to Post Project PTE, as such only one set of emissions is shown.

[2] Throughput based on permit limit in Appendix D of the Title V Permit (Permit No. 85424)

[3] Kiln 4 PTE provided in the Facility's PTE workbooks provided by ADEQ on 8/21/2024.

Table 6c-1. Kiln 4 Monthly SO_2 Emissions from January 2020 to February 2025

Month	Year	Kiln Feed[1] (ton/month)	Emission Factor[2] (lb/ton kiln feed)	Monthly Emissions[3] (lb/month)
			SO_2	SO_2
8	2019	150,088.95	0.0059	885.525
9	2019	139,020.75	0.0059	820.222
10	2019	150,334.80	0.0059	886.975
11	2019	5,999.40	0.0059	35.396
12	2019	105,613.20	0.0059	623.118
1	2020	146,001.90	0.0059	861.411
2	2020	154,758.45	0.0059	913.075
3	2020	138,091.80	0.0059	814.742
4	2020	151,788.45	0.0059	895.552
5	2020	169,620.00	0.0059	1000.758
6	2020	157,180.65	0.0059	927.366
7	2020	173,860.50	0.0059	1025.777
8	2020	136,587.00	0.0059	805.863
9	2020	160,792.50	0.0059	948.676
10	2020	163,968.75	0.0059	967.416
11	2020	105,834.30	0.0059	624.422
12	2020	130,090.95	0.0059	767.537
1	2021	163,039.80	0.0059	961.935
2	2021	147,396.15	0.0059	869.637
3	2021	115,483.50	0.0059	681.353
4	2021	129,054.75	0.0059	761.423
5	2021	181,269.00	0.0059	1069.487
6	2021	147,485.25	0.0059	870.163
7	2021	170,390.55	0.0059	1005.304
8	2021	155,608.20	0.00022	34.234
9	2021	172,487.70	0.00022	37.947
10	2021	166,607.10	0.00022	36.654
11	2021	128,756.10	0.00022	28.326
12	2021	166,775.40	0.00022	36.691
1	2022	161,036.70	0.00022	35.428
2	2022	172,223.70	0.00022	37.889
3	2022	129,244.50	0.00022	28.434
4	2022	157,721.85	0.00022	34.699
5	2022	80,802.15	0.00022	17.776
6	2022	119,821.35	0.00022	26.361
7	2022	167,252.25	0.00022	36.795
8	2022	170,822.85	0.00022	37.581
9	2022	153,775.05	0.00022	33.831
10	2022	169,657.95	0.00022	37.325
11	2022	151,828.05	0.00022	33.402
12	2022	146,660.25	0.00022	32.265
1	2023	157,608.00	0.00022	34.674
2	2023	159,535.20	0.00022	35.098
3	2023	178,366.65	0.00022	39.241
4	2023	124,693.80	0.00022	27.433
5	2023	171,251.85	0.00022	37.675
6	2023	177,005.40	0.00022	38.941
7	2023	158,289.45	0.00022	34.824
8	2023	162,888.00	0.00022	35.835
9	2023	149,942.10	0.00022	32.987
10	2023	30,407.85	0.00022	6.690
11	2023	131,773.95	0.00022	28.990
12	2023	177,848.55	0.00022	39.127
1	2024	162,602.55	0.00022	35.773
2	2024	146,833.50	0.00022	32.303
3	2024	147,689.85	0.00022	32.492
4	2024	163,290.60	0.00022	35.924
5	2024	161,983.80	0.00022	35.636
6	2024	131,382.90	0.00022	28.904
7	2024	135,943.50	0.00022	29.908
8	2024	155,939.85	0.00022	34.307
9	2024	110,107.80	0.00022	24.224
10	2024	161,549.85	0.00022	35.541
11	2024	134,781.90	0.00022	29.652
12	2024	137,831.10	0.00022	30.323
1	2025	85,870.95	0.00022	18.892
2	2025	114,099.15	0.00022	25.102

[1] Clinker production data for 09/2019 - 07/2024 was obtained from the MPR application submitted by CalPortland to ADEQ on 02/2025, while data for 8/2024 thorugh 2/2025 was provided by CalPortland on 4/25/2025. Kiln feed was calculated based on kiln feed to clinker ratio of 1.65:1 specified in the Technical Support Document for Permit No. 85424.

[2] Emission factors from source tests conducted in 2016 and 2021.

[3] Monthly Emissions (lb/month) = Kiln Feed (ton/month) x Emission Factor (lb/ton kiln feed).

Table 6c-2. Kiln 4 Baseline Actual Emissions (BAE) Determination[1] - SO_2

Period Start	24-Month Time Period End	Average Kiln Feed Rate (tpy)	BAE Determination (tpy)
			SO_2
Aug-19	Jul-21	1,696,875.68	5.01
Sep-19	Aug-21	1,699,635.30	4.79
Oct-19	Sep-21	1,716,368.78	4.60
Nov-19	Oct-21	1,724,504.93	4.38
Dec-19	Nov-21	1,785,883.28	4.38
Jan-20	Dec-21	1,816,464.38	4.24
Feb-20	Jan-22	1,823,981.78	4.03
Mar-20	Feb-22	1,832,714.40	3.81
Apr-20	Mar-22	1,828,290.75	3.61
May-20	Apr-22	1,831,257.45	3.40
Jun-20	May-22	1,786,848.53	3.15
Jul-20	Jun-22	1,768,168.88	2.93
Aug-20	Jul-22	1,764,864.75	2.68
Sep-20	Aug-22	1,781,982.68	2.49
Oct-20	Sep-22	1,778,473.95	2.26
Nov-20	Oct-22	1,781,318.55	2.03
Dec-20	Nov-22	1,804,315.43	1.88
Jan-21	Dec-22	1,812,600.08	1.70
Feb-21	Jan-23	1,809,884.18	1.46
Mar-21	Feb-23	1,815,953.70	1.26
Apr-21	Mar-23	1,847,395.28	1.10
May-21	Apr-23	1,845,214.80	0.91
Jun-21	May-23	1,840,206.23	0.65
Jul-21	Jun-23	1,854,966.30	0.45
Aug-21	Jul-23	1,848,915.75	0.20
Sep-21	Aug-23	1,852,555.65	0.20
Oct-21	Sep-23	1,841,282.85	0.20
Nov-21	Oct-23	1,773,183.23	0.20
Dec-21	Nov-23	1,774,692.15	0.20
Jan-22	Dec-23	1,780,228.73	0.20
Feb-22	Jan-24	1,781,011.65	0.20
Mar-22	Feb-24	1,768,316.55	0.19
Apr-22	Mar-24	1,777,539.23	0.20
May-22	Apr-24	1,780,323.60	0.20
Jun-22	May-24	1,820,914.43	0.20
Jul-22	Jun-24	1,826,695.20	0.20
Aug-22	Jul-24	1,811,040.83	0.20
Sep-22	Aug-24	1,803,599.33	0.20
Oct-22	Sep-24	1,781,765.70	0.20
Nov-22	Oct-24	1,777,711.65	0.20
Dec-22	Nov-24	1,769,188.58	0.19
Jan-23	Dec-24	1,764,774.00	0.19
Feb-23	Jan-25	1,728,905.48	0.19
Mar-23	Feb-25	1,706,187.45	0.19
24-Month Annual Average BAE (tpy)			5.01
Corresponding 24-Month Time Period			Aug 2019-Jul 2021
BAE Emission Factor (lb/ton kiln feed)			0.0059

[1] BAE calculated pursuant to Arizona Administrative Code, Title 18, Chapter 2, Article 1, R18-2-401.2.

Table 6c-3. Kiln 4 Projected Actual Emissions (PAE)[1] - SO_2

Projected Kiln Feed[2] (tpy)	PAE EF (lb/ton kiln feed)	PAE[3] (tpy)
	SO_2	SO_2
1,938,750.00	0.0059	5.72

[1] PAE calculated pursuant to Arizona Administrative Code, Title 18, Chapter 2, Article 1, R18-2-401.23. and 40 CFR 52.21.

[2] Projected kiln feed rate based on the projected clinker production in tons per year provided by CalPortland on 6/10/2025 multiplied by the kiln feed to clinker ratio of 1.65:1 specified in the Technical Support Document for Permit No. 85424.

[3] PAE Emissions (tpy) = PAE Emission Factor (lb/ton) x Projected Kiln Feed Rate (ton/year) / 2000 (lb/ton)

Table6c-4. Kiln 4 Could Have Accommodated (CHA) Emissions[1] - SO_2

Pollutant	Baseline Period Kiln Feed Rate[2] (tpy)	CHA Kiln Feed Rate (tpy)[3]	Emission Factor[4] (lb/ton)	CHA Emissions[5] (tpy)
SO_2	1,696,875.68	478,352.33	0.0059	1.41

[1] CHA Emissions calculated pursuant to Arizona Administrative Code, Title 18, Chapter 2, Article 1, R18-2-401.23 and 40 CFR 52.21.

[2] Refer to Table 6c-1 for corresponding clinker production during the respective baseline period selected for the relevant pollutant.

[3] The kiln's CHA capacity, was evaluated using the highest monthly production rate achieved during the baseline period.The theoretical maximum annual output was calculated as 12 multiplied by this peak monthly rate, as restricted to the legally allowable limit. The accommodated production rate—representing the additional output achievable within compliance—is derived by subtracting the baseline production rate from this permitted maximum.

[4] Refer to Table 6c-2 for BAE emission factor used in CHA emission calculations.

[5] CHA Emissions (tpy) = CHA Clinker Production (ton clinker/year) x BAE Emission Factor (lb pollutant/ton clinker) / 2,000 (lb/ton)

Table B-5E Kiln 4 Pre Project and Post Project Potential to Emit Emissions[1]

Pollutant	Clinker Production[2] (tph)	Emission Factor[3] (lb/ton clinker)	Emissions[4] (tpy)
SO_2	207.00	9.90	8,975.93

[1] Pre Project PTE is equal to Post Project PTE, as such only one set of emissions is shown.

[2] Throughput based on permit limit in Appendix D of the Title V Permit (Permit No. 85424)

[3] Emission factors based on the Facility's PTE workbooks provided by ADEQ on 8/21/2024.

[4] Operating hours conservatively assumed to be 8760 hours per year.

Table 6d-1. Kiln Monthly PM Emissions from March 2020 to February 2025

Month/Year	Month	Year	Clinker Production (ton/month)	Stack Test Emission Factors[1,2,3] (lb/ton)			Monthly Emissions[4] (lb/month)		
				PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
Jan-20	1	2020	146,002	0.014	0.014	0.010	2,085	2,085	1,493
Feb-20	2	2020	154,758	0.014	0.014	0.010	2,210	2,210	1,582
Mar-20	3	2020	83,692	0.017	0.017	0.012	1,398	1,398	1,001
Apr-20	4	2020	91,993	0.016	0.016	0.012	1,494	1,494	1,070
May-20	5	2020	102,800	0.017	0.017	0.012	1,733	1,733	1,241
Jun-20	6	2020	95,261	0.017	0.017	0.012	1,591	1,591	1,139
Jul-20	7	2020	105,370	0.017	0.017	0.012	1,745	1,745	1,250
Aug-20	8	2020	82,780	0.012	0.012	0.009	987	987	707
Sep-20	9	2020	97,450	0.012	0.012	0.009	1,178	1,178	843
Oct-20	10	2020	99,375	0.012	0.012	0.008	1,178	1,178	844
Nov-20	11	2020	64,142	0.012	0.012	0.009	763	763	546
Dec-20	12	2020	78,843	0.012	0.012	0.009	942	942	674
Jan-21	1	2021	98,812	0.012	0.012	0.009	1,180	1,180	845
Feb-21	2	2021	89,331	0.012	0.012	0.009	1,082	1,082	775
Mar-21	3	2021	69,990	0.012	0.012	0.008	828	828	592
Apr-21	4	2021	78,215	0.012	0.012	0.009	963	963	689
May-21	5	2021	109,860	0.012	0.012	0.009	1,347	1,347	964
Jun-21	6	2021	89,385	0.012	0.012	0.009	1,066	1,066	763
Jul-21	7	2021	103,267	0.012	0.012	0.009	1,253	1,253	897
Aug-21	8	2021	94,308	0.012	0.012	0.009	1,120	1,120	802
Sep-21	9	2021	104,538	0.012	0.012	0.009	1,268	1,268	908
Oct-21	10	2021	100,974	0.012	0.012	0.009	1,225	1,225	877
Nov-21	11	2021	78,034	0.030	0.030	0.022	2,347	2,347	1,680
Dec-21	12	2021	101,076	0.030	0.030	0.021	2,998	2,998	2,146
Jan-22	1	2022	97,598	0.029	0.029	0.021	2,859	2,859	2,047
Feb-22	2	2022	104,378	0.029	0.029	0.021	3,068	3,068	2,197
Mar-22	3	2022	78,330	0.029	0.029	0.021	2,279	2,279	1,632
Apr-22	4	2022	95,589	0.031	0.031	0.022	2,980	2,980	2,134
May-22	5	2022	48,971	0.030	0.030	0.022	1,482	1,482	1,061
Jun-22	6	2022	72,619	0.030	0.030	0.022	2,190	2,190	1,568
Jul-22	7	2022	101,365	0.030	0.030	0.022	3,087	3,087	2,210
Aug-22	8	2022	103,529	0.038	0.038	0.027	3,971	3,971	2,843
Sep-22	9	2022	93,197	0.042	0.042	0.030	3,880	3,880	2,778
Oct-22	10	2022	102,823	0.039	0.039	0.028	3,976	3,976	2,847
Nov-22	11	2022	92,017	0.039	0.039	0.028	3,575	3,575	2,560
Dec-22	12	2022	88,885	0.037	0.037	0.027	3,309	3,309	2,369
Jan-23	1	2023	95,520	0.038	0.038	0.027	3,624	3,624	2,595
Feb-23	2	2023	96,688	0.038	0.038	0.027	3,630	3,630	2,599
Mar-23	3	2023	108,101	0.038	0.038	0.027	4,108	4,108	2,941
Apr-23	4	2023	75,572	0.038	0.038	0.027	2,887	2,887	2,067
May-23	5	2023	103,789	0.039	0.039	0.028	4,086	4,086	2,925
Jun-23	6	2023	107,276	0.038	0.038	0.027	4,081	4,081	2,922
Jul-23	7	2023	95,933	0.038	0.038	0.027	3,655	3,655	2,617
Aug-23	8	2023	98,720	0.039	0.039	0.028	3,891	3,891	2,786
Sep-23	9	2023	90,874	0.031	0.031	0.022	2,855	2,855	2,044
Oct-23	10	2023	18,429	0.029	0.029	0.021	538	538	385
Nov-23	11	2023	79,863	0.032	0.032	0.023	2,516	2,516	1,802
Dec-23	12	2023	107,787	0.032	0.032	0.023	3,460	3,460	2,477
Jan-24	1	2024	98,547	0.032	0.032	0.023	3,114	3,114	2,229
Feb-24	2	2024	88,990	0.031	0.031	0.022	2,732	2,732	1,956
Mar-24	3	2024	89,509	0.032	0.032	0.023	2,832	2,832	2,028
Apr-24	4	2024	98,964	0.031	0.031	0.022	3,064	3,064	2,194
May-24	5	2024	98,172	0.032	0.032	0.023	3,095	3,095	2,216
Jun-24	6	2024	79,626	0.031	0.031	0.022	2,493	2,493	1,785
Jul-24	7	2024	82,390	0.032	0.032	0.023	2,626	2,626	1,880
Aug-24	8	2024	94,509	0.033	0.033	0.023	3,076	3,076	2,202
Sep-24	9	2024	66,732	0.032	0.032	0.023	2,119	2,119	1,517
Oct-24	10	2024	97,909	0.014	0.014	0.010	1,354	1,354	969
Nov-24	11	2024	81,686	0.013	0.013	0.010	1,099	1,099	787
Dec-24	12	2024	83,534	0.014	0.014	0.010	1,149	1,149	823
Jan-25	1	2025	52,043	0.013	0.013	0.009	689	689	494
Feb-25	2	2025	69,151	0.014	0.014	0.010	958	958	686

[1] For all months other than 1/2020 and 2/2020, emission Factor (lb/ton) = Fraction of Raw Mill ON x Emission Rate Raw Mill ON (lb/ton) + Fraction of Raw Mill OFF x Emission Rate Raw Mill OFF (lb/ton). The 1/2020 and 2/2020 emission factors were estimated as the average of all other calculated values for 2020.

[2] PM_{10} emission factors are assumed to be equal to PM emission factors.

[3] $PM_{2.5}$ Fraction of PM10 based on CalPortland's previous emission inventories from 4/13/2004 source test where

$PM_{2.5}$ = 71.6 % of PM_{10}

[4] Monthly Emission (lb/month) = Emission Factor (lb/ton) x Clinker Produced (ton/month)

Table 6d-2. Kiln Particulate Baseline Actual Emissions (BAE) Determination

Month/Year	Clinker Production[1] (ton/yr)	Yearly Emissions (ton/yr)		
		PM	PM_{10}	$PM_{2.5}$
2020	1,202,466	8.65	8.65	6.19
2021	1,117,790	8.34	8.34	5.97
2022	1,079,301	18.33	18.33	13.12
2023	1,078,552	19.67	19.67	14.08
2024	1,060,568	14.38	14.38	10.29
24-Month Annual Average BAE (tpy)		17.02	17.02	13.60

[1] BAE calculated pursuant to Arizona Administrative Code, Title 18, Chapter 2, Article 1, R18-2-401.2.

Table 6d-3. Projected Actual Emissions of Kiln [1]

Projected Clinker Production[2] (tpy)	PAE Emission Factors (lb/ton)			PAE[3] (tpy)		
	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
1,175,000	0.032	0.032	0.025	18.70	18.70	14.81

[1] PAE calculated pursuant to Arizona Administrative Code, Title 18, Chapter 2, Article 1, R18-2-401.23. and 40 CFR 52.21.

[2] Projected clinker production in tons per year provided by Andrew Estrella (CalPortland) in a 6/10/2025 email to Trinity.

[3] PAE Emissions (tpy) = PAE Emission Factor (lb/ton) x Projected Clinker Production (ton/year) / 2000 (lb/ton)

Table 6d-4. Kiln 4 Could Have Accommodated (CHA) Emissions[1] - PM

Pollutant	Baseline Period Clinker Production[2] (tpy)	CHA Clinker Production[3] (tpy)	Emission Factor[4] (lb/ton)	CHA Emissions[5] (tpy)
PM	1,069,560.00	227,652.00	0.032	3.62
PM_{10}	1,069,560.00	227,652.00	0.032	3.62
$PM_{2.5}$	1,078,926.50	218,285.50	0.025	2.75

[1] CHA Emissions calculated pursuant to Arizona Administrative Code, Title 18, Chapter 2, Article 1, R18-2-401.23 and 40 CFR 52.21.

[2] Refer to Table 6d-1 for corresponding clinker production during the respective baseline period selected for the relevant pollutant.

[3] The kiln's CHA capacity, was evaluated using the highest monthly production rate achieved during the baseline period.The theoretical maximum annual output was calculated as 12 multiplied by this peak monthly rate, as restricted to the legally allowable limit. The accommodated production rate—representing the additional output achievable within compliance—is derived by subtracting the baseline production rate from this permitted maximum.

[4] Refer to Table 6d-2 for BAE emission factor used in CHA emission calculations.

[5] CHA Emissions (tpy) = CHA Clinker Production (ton clinker/year) x BAE Emission Factor (lb pollutant/ton clinker) / 2,000 (lb/ton)

Table 6d-5. Kiln 4 Pre Project and Post Project Potential to Emit Emissions[1]

Pollutant	Clinker Production[2] (tph)	Emission Factor[3,4] (lb/ton clinker)	Emissions[5] (tpy)
PM	207.00	0.070	27222.22
PM_{10}		0.070	27222.22
$PM_{2.5}$		0.050	19491.11

[1] Pre Project PTE is equal to Post Project PTE, as such only one set of emissions is shown.

[2] Throughput based on permit limit in Appendix D of the Title V Permit (Permit No. 85424)

[3] Emission factors based on the NESHAP LLL limit

[4] $PM_{2.5}$ Fraction of PM_{10} based on CalPortland's previous emission inventories from 4/13/2004 source test where

$PM_{2.5}$ = 71.6 % of PM_{10}

[5] Operating hours conservatively assumed to be 8760 hours per year.

Table 6e-1. Twin Peaks Existing Sources - Transfer Point Emission Factors and Parameters

Emission Point Number	Description	Control / Capture	Control Type	Particulate Control Efficiency (%)	Uncontrolled Emission Factor [1,2,3]			Controlled Emission Factor		
					PM (lb/ton)	PM_{10} (lb/ton)	$PM_{2.5}$ (lb/ton)	PM (lb/ton)	PM_{10} (lb/ton)	$PM_{2.5}$ (lb/ton)
Primary Crushing from Quarry										
TP-DP-1	Belt Conveyor B11-BC2 to Belt Conveyor B11-TS-BC1	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-2	Belt Conveyor B11-TS-BC1 to Belt Conveyor B11-TS-BC2	Control	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-3	Belt Conveyor B11-TS-BC2 to the Aggregate Plant Feed Stockpile	Control	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-4	Aggregate Plant Feed Stockpile Loadout	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
Twin Peaks Rock										
TP-DP-5	Loader Transfer into Hopper 1	Control	Water-based Wet Suppression	90%	0.000016	0.000016	0.000016	0.000002	0.000002	0.000002
TP-DP-6	Hopper 1 into Conveyor C-1	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-7	Conveyor C-1 into Conveyor C-2	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-8	Screen S-1	Control	Water-based Wet Suppression	In emission factor	0.025000	0.008700	0.008700	0.002200	0.000740	0.000050
TP-DP-9	Conveyor C-4 into Conveyor C-3	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-10	Conveyor C-3 into Conveyor C-13	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-11	Conveyor C-13 into 1/2" Screen Fill Material Pile	Control	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-12	1/2" Screen Fill Material Pile Loadout	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-13	Crusher CR-1	Capture	TP-DC1 Baghouse	Emissions Routed to TP-DC1 Since 2023	0.005400	0.002400	0.002400	0.001200	0.000540	0.000100
TP-DP-14	Conveyor C-6 into Conveyor C-7	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-15	Screen S-2	Control	Water-based Wet Suppression	In emission factor	0.025000	0.008700	0.008700	0.002200	0.000740	0.000050
TP-DP-16	Conveyor C-11 into Conveyor C-5	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-17	Conveyor C-8 into Conveyor C-10	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-18	Conveyor C-9 into Conveyor C-10	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-19	Conveyor C-4 into Conveyor C-10	Control	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-20	Conveyor C-10 into Splitter 1	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-21	Splitter 1 into Conveyor C-12	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-22	Twin Peaks Lime Silo	AG-LS1-DC Bin Vent	In emission factor	-	-	-	0.000990	0.000340	0.000340
TP-DP-23	Splitter into Conveyor C-14	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-24	Lime Silo into Conveyor C-14	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-25	Conveyor C-14 into Conveyor C-15	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-26	Conveyor C-15 into Conveyor C-26	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-27	Conveyor C-26 into Limestone Stockpile	Control	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-28	Limestone Stockpile Loadout	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-29	Loader into Hopper 2	Control	Water-based Wet Suppression	90%	0.000016	0.000016	0.000016	0.000002	0.000002	0.000002
TP-DP-30	Hopper 2 into Conveyor C-29	Control	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-31	Conveyor C-29 into Conveyor C-14	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-32	Conveyor C-12 into Conveyor C-25	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-33	Conveyor C-25 into Splitter 2	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-34	Screen S-3	Control	Water-based Wet Suppression	In emission factor	0.025000	0.008700	0.008700	0.002200	0.000740	0.000050
TP-DP-35	Screen S-4	Control	Water-based Wet Suppression	In emission factor	0.025000	0.008700	0.008700	0.002200	0.000740	0.000050
TP-DP-36	Conveyor C-27 into Conveyor C-28	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-37	Conveyor C-28 into Conveyor C-11	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-38	Conveyor C-27 into Conveyor C-16	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-39	Conveyor C-16 into Product Pile 3	Control	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-40	Product Pile 3 Loadout	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-41	Conveyor C-17 into Conveyor C-20	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-42	Conveyor C-20 into Product Pile 1	Control	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-43	Product Pile 1 Loadout	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-44	Conveyor C-18 into Conveyor C-19	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-45	Conveyor C-19 into Product Pile 2	Control	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-46	Product Pile 2 Loadout	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-47	Conveyor C-21 into Conveyor C-23	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-48	Conveyor C-22 into Conveyor C-23	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-49	Conveyor C-23 into Conveyor C-24	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-50	Conveyor C-24 into Product Pile 4	Control	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
TP-DP-51	Product Pile 4 Loadout	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
Cotton Field Primary and Overland										
CF-DP1	Excavation of Cotton Field Pit	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP2	Loader Feed to Grizzly F-2	Control	Water-based Wet Suppression	90%	0.000016	0.000016	0.000016	0.000002	0.000002	0.000002
CF-DP3	Crusher CR-2	Control	Water-based Wet Suppression	In emission factor	0.005400	0.002400	0.002400	0.001200	0.000540	0.000100
CF-DP4	Grizzly F-2 into Conveyor C-30	Control	Upstream Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP5	Conveyor C-30 into Conveyor C-31	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP6	Conveyor C-31 to into Conveyor C-32	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP7	Screen S-5	Control	Water-based Wet Suppression	In emission factor	0.025000	0.008700	0.008700	0.002200	0.000740	0.000050
CF-DP8	Crusher CR-3	Control	Water-based Wet Suppression	In emission factor	0.005400	0.002400	0.002400	0.001200	0.000540	0.000100
CF-DP9	Conveyor C-35 into Conveyor C-36	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP10	Conveyor C-36 Conveyor C-37	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP11	Conveyor C-37 Conveyor C-38	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP12	Conveyor C-38 to Conveyor C-39	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP13	Conveyor C-39 to Conveyor C-40	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP14	Conveyor C-40 to Conveyor C-41	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP15	Conveyor C-41 to Conveyor C-42	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP16	Conveyor C-42 to Conveyor C-43	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP17	Conveyor C-43 Conveyor C-44	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP18	Conveyor C-44 to Conveyor C-74	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP19	Conveyor C-74 into Cotton Field Aggregate Storage Pile	Control	Water-based Wet Suppression	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037
CF-DP20	Aggregate Storage Pile Loadout	Control	None	90%	0.005209	0.002464	0.000373	0.000521	0.000246	0.000037

[1] Uncontrolled emission factors using the "drop equation" contained in AP-42, Section 13.2.4 (Aggregate Handling and Storage Piles), November 2006, as follows:

$$E = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (pound [lb]/ton)}$$

Where:
E = Emission factor (lb/ton)
k = Particle size multiplier (dimensionless)

	PM	PM_{10}	$PM_{2.5}$
	0.74	0.35	0.053

U = Mean wind speed (miles per hour [mph])

8.039

Per the surface wind speed data obtained from the Tucson Airport meteorological station published by ADEQ for the 2017-2021 period.

M = Material moisture content (%)

Aggregate	Sand
1.77	4.17

Per moisture content of aggregate and sand from AP-42 Table 11.12-2 footnote b)

[2] Crushing, screening, and grizzly emission factors from AP-42, Table 11.19.2-2 were used per historic ADEQ emission factors in "PM EF" tab. The emission factors are inclusive of emissions generated by the drop into the equipment unit and the stone-to-stone attrition during crushing and screening processes.

	PM	PM_{10}	$PM_{2.5}$	
Tertiary crushing (uncontrolled)	0.0054	0.0024	0.0024	$PM_{2.5}$ conservatively assumed to be equal to PM_{10}.
Tertiary crushing (controlled)	0.0012	0.00054	0.00010	
Screening (uncontrolled)	0.025	0.0087	0.00870	$PM_{2.5}$ conservatively assumed to be equal to PM_{10}.
Screening (controlled)	0.0022	0.00074	0.000050	

[3] Lime silo loading emissions (TP-DP-22) emission factors per historical values approved by ADEQ in Permit No. 85424 obtained from AP-42 Section 11.12 Table 11.12-2 for cement unloading to elevated silo (pneumatic).

Table 6e-2. Twin Peaks Existing Sources - Piles Emission Factors and Parameters

Emission Unit ID	Description	Silt Content [1]	f [2]	Emission Factor [1,2] (lb/day/acre)		
		(%)	%	PM	PM_{10}	$PM_{2.5}$
TP-Pile-1	1/2" Screen Fill Pile	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-2	Product Pile 1	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-3	Product Pile 2	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-4	Product Pile 3	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-5	Product Pile 4	2.6	0.54	1.37E-01	6.86E-02	1.04E-02
TP-Pile-6	Limestone Stockpile	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
CF-Pile-1	Cotton Field Aggregate Storage Pile	7.1	0.53	3.70E-01	1.85E-01	2.80E-02

[1] Emission factors for storage stockpiles per Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, EPA-450/2-92-004, September 1992.
The PM_{10} emission factor is half the PM emission.

$$EF = 1.7\left(\frac{s}{1.5}\right)\left(\frac{365-P}{235}\right)\left(\frac{f}{15}\right)$$

Where:

EF = PM Emission factor (lb/day/acre)
s = Silt Content (%), for aggregate obtained from AP-42 Section 13.2.1 Table 13.2.1-3 for sand and gravel processing, and for sand obtained from AP-42 Section 13.2.4 Table 13.2.4-1.
f = % of time the unobstructed wind speed exceeds 12 mph at the stockpile height

Based on wind speed data obtained from the ADEQ AERMET data file for Tucson, AZ for the 2017 to 2021 period (anemometer height of 10 m) and has been adjusted for value at each pile height using the following equation:

$$\frac{U_{hdi}}{U_{anem}} = \frac{\ln(z_{hdi}/z_0)}{\ln(z_{anem}/z_0)}$$

Where:
U_{hdi} (m) = Adjusted wind speed at stockpile height
z_0 (m) Surface roughness length.
z_{hdi} (m) = Stockpile height
z_{anem} (m)= Anemometer height
P = Days per year with at least 0.01 inch precipitation (days)
60 Based on AP-42 Figure 13.2.1-2.

[2] Per AP-42, Section 13.2.4, November 2006, the particle size multiplier used for calculating emission factors is as follows:

PM_{10} = 0.35
$PM_{2.5}$ = 0.053

Emission Unit ID	Vehicle Type	Description	Averaging Period	Particulate Matter Emission Factor Inputs [1]												Uncontrolled Emission Factor [1]			
				k			W	s	P	a			b						
				PM	PM_{10}	$PM_{2.5}$	(ton)	(%)	(days/yr)	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	Unit
Twin Peaks Rock and Stone Aggregate Plant																			
TP-RT-1	Caterpillar 988 Front End Loader	Loader Transfer from Twin Peaks Aggregate Plant Feed Stockpile to Hopper 1	Hourly/Daily	4.9	1.5	0.15	63.79	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45	10.21	2.60	0.26	lb/VMT
			Annual	-	-	-	63.79	4.8	60	-	-	-	-	-	-	8.53	2.17	0.22	lb/VMT
TP-RT-2	Caterpillar 982 XE Front End Loader	Loader Transfer from Aggregate Plant Finished Stockpiles to Customer Trucks	Hourly/Daily	4.9	1.5	0.15	45.13	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45	8.74	2.23	0.22	lb/VMT
			Annual	-	-	-	45.13	4.8	60	-	-	-	-	-	-	7.30	1.86	0.19	lb/VMT
TP-RT-3	Customer Truck	Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant	Hourly/Daily	4.9	1.5	0.15	28.25	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45	7.08	1.80	0.18	lb/VMT
			Annual	-	-	-	28.25	4.8	60	-	-	-	-	-	-	5.91	1.51	0.15	lb/VMT
Cotton Field Primary and Overland																			
TP-RT-4	Caterpillar 982 XE Front End Loader	Loader Travel from Equipment Parking to Pit	Hourly/Daily	4.9	1.5	0.15	56.287	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45	9.65	2.46	0.25	lb/VMT
			Annual	-	-	-	56.287	4.8	60	-	-	-	-	-	-	8.07	2.06	0.21	lb/VMT
TP-RT-5	Caterpillar 988 Front End Loader	Loader Transfer from Cotton Field Pit Face to Grizzly F-2	Hourly/Daily	4.9	1.5	0.15	63.79	4.8	60	0.7	0.9	0.9	0.45	0.45	0.45	10.21	2.60	0.26	lb/VMT
			Annual	-	-	-	63.79	4.8	60	-	-	-	-	-	-	8.53	2.17	0.22	lb/VMT

[1] Emission factors for vehicular traffic on unpaved roads per AP-42, Section 13.2.2 (Unpaved Roads), November 2006.

Short-Term $E = k\,(s/12)^a(W/3)^b$ (1a)

Annual $E_{ext} = E\,[(365-P)/365]$ (2)

Where:

E = Size-specific emission factor (pound per vehicle mile traveled [lb/VMT])
(Per AP-42 Table 13.2.2-2, November 2006)
k, a, b = Constants for equation 1a

	PM	PM_{10}	$PM_{2.5}$
k =	4.9	1.5	0.15
a =	0.7	0.9	0.9
b =	0.45	0.45	0.45

s = Surface material silt content (%) 4.8
(Silt content per U.S. AP-42 Table 13.2.2-1 for Sand and gravel processing plant roads.)
W = Mean vehicle weight (tons)
P = 60 Based on AP-42 Figure 13.2.1-2.

Table 6e-3. Twin Peaks - Material Processing and Handling PM Emissions

Emission Point Number	Description	2020				2021				2022				2023				2024			
		Annual Throughput [1]	Controlled Annual Emissions (tpy) [6,7,8]			Annual Throughput [2]	Controlled Annual Emissions (tpy) [6,7,8]			Annual Throughput [3]	Controlled Annual Emissions (tpy) [6,7,8]			Annual Throughput [4]	Controlled Annual Emissions (tpy) [6,7,8]			Annual Throughput [5]	Controlled Annual Emissions (tpy) [6,7,8]		
		(tpy)	PM	PM_{10}	$PM_{2.5}$	(tpy)	PM	PM_{10}	$PM_{2.5}$	(tpy)	PM	PM_{10}	$PM_{2.5}$	(tpy)	PM	PM_{10}	$PM_{2.5}$	(tpy)	PM	PM_{10}	$PM_{2.5}$
Primary Crushing from Quarry																					
TP-DP-1	Belt Conveyor B11-BC2 to Belt Conveyor B11-TS-BC1	210,580	0.05	0.03	0.00	314,963	0.08	0.04	0.01	577,266	0.15	0.07	0.01	759,236	0.20	0.09	0.01	783,617	0.20	0.10	0.01
TP-DP-2	Belt Conveyor B11-TS-BC1 to Belt Conveyor B11-TS-BC2	210,580	0.05	0.03	0.00	314,963	0.08	0.04	0.01	577,266	0.15	0.07	0.01	759,236	0.20	0.09	0.01	783,617	0.20	0.10	0.01
TP-DP-3	Belt Conveyor B11-TS-BC2 to the Aggregate Plant Feed Stockpile	210,580	0.05	0.03	0.00	314,963	0.08	0.04	0.01	577,266	0.15	0.07	0.01	759,236	0.20	0.09	0.01	783,617	0.20	0.10	0.01
TP-DP-4	Aggregate Plant Feed Stockpile Loadout	210,580	0.05	0.03	0.00	314,963	0.08	0.04	0.01	577,266	0.15	0.07	0.01	759,236	0.20	0.09	0.01	783,617	0.20	0.10	0.01
Twin Peaks Rock and Stone Plant																					
TP-DP-5	Loader Transfer into Hopper 1	202,156	0.000	0.000	0.000	302,365	0.00	0.00	0.00	554,175	0.00	0.00	0.00	728,867	0.00	0.00	0.00	752,272	0.00	0.00	0.00
TP-DP-6	Hopper 1 into Conveyor C-1	202,156	0.053	0.025	0.004	302,365	0.08	0.04	0.01	554,175	0.14	0.07	0.01	728,867	0.19	0.09	0.01	752,272	0.20	0.09	0.01
TP-DP-7	Conveyor C-1 into Conveyor C-2	202,156	0.053	0.025	0.004	302,365	0.08	0.04	0.01	554,175	0.14	0.07	0.01	728,867	0.19	0.09	0.01	752,272	0.20	0.09	0.01
TP-DP-8	Screen S-1	96,867	0.107	0.036	0.002	144,883	0.16	0.05	0.00	265,542	0.29	0.10	0.01	349,249	0.38	0.13	0.01	360,464	0.40	0.13	0.01
TP-DP-9	Conveyor C-4 into Conveyor C-3	78,757	0.021	0.010	0.001	117,796	0.03	0.01	0.00	215,897	0.06	0.03	0.00	283,954	0.07	0.03	0.01	293,073	0.08	0.04	0.01
TP-DP-10	Conveyor C-3 into Conveyor C-13	77,914	0.020	0.010	0.001	116,536	0.03	0.01	0.00	213,588	0.06	0.03	0.00	280,917	0.07	0.03	0.01	289,938	0.08	0.04	0.01
TP-DP-11	Conveyor C-13 into 1/2" Screen Fill Material Pile	77,914	0.020	0.010	0.001	116,536	0.03	0.01	0.00	213,588	0.06	0.03	0.00	280,917	0.07	0.03	0.01	289,938	0.08	0.04	0.01
TP-DP-12	1/2" Screen Fill Material Pile Loadout	77,914	0.020	0.010	0.001	116,536	0.03	0.01	0.00	213,588	0.06	0.03	0.00	280,917	0.07	0.03	0.01	289,938	0.08	0.04	0.01
TP-DP-13	Crusher CR-1	113,713	0.068	0.031	0.006	170,080	0.10	0.05	0.01	311,724	0.19	0.08	0.02	409,987	0.13	0.01	0.01	423,153	0.40	0.04	0.03
TP-DP-14	Conveyor C-6 into Conveyor C-7	113,713	0.030	0.014	0.002	170,080	0.04	0.02	0.00	311,724	0.08	0.04	0.01	409,987	0.11	0.05	0.01	423,153	0.11	0.05	0.01
TP-DP-15	Screen S-2	113,713	0.125	0.042	0.003	170,080	0.19	0.06	0.00	311,724	0.34	0.12	0.01	409,987	0.45	0.15	0.01	423,153	0.47	0.16	0.01
TP-DP-16	Conveyor C-11 into Conveyor C-5	21,058	0.005	0.003	0.000	31,496	0.01	0.00	0.00	57,727	0.02	0.01	0.00	75,924	0.02	0.01	0.00	78,362	0.02	0.01	0.00
TP-DP-17	Conveyor C-8 into Conveyor C-10	111,607	0.029	0.014	0.002	166,930	0.04	0.02	0.00	305,951	0.08	0.04	0.01	402,395	0.10	0.05	0.01	415,317	0.11	0.05	0.01
TP-DP-18	Conveyor C-9 into Conveyor C-10	16,846	0.004	0.002	0.000	25,197	0.01	0.00	0.00	46,181	0.01	0.01	0.00	60,739	0.02	0.01	0.00	62,689	0.02	0.01	0.00
TP-DP-19	Conveyor C-4 into Conveyor C-10	78,757	0.021	0.010	0.001	117,796	0.03	0.01	0.00	215,897	0.06	0.03	0.00	283,954	0.07	0.03	0.01	293,073	0.08	0.04	0.01
TP-DP-20	Conveyor C-10 into Splitter 1	111,607	0.029	0.014	0.002	166,930	0.04	0.02	0.00	305,951	0.08	0.04	0.01	402,395	0.10	0.05	0.01	415,317	0.11	0.05	0.01
TP-DP-21	Splitter 1 into Conveyor C-12	88,443	0.023	0.011	0.002	132,285	0.03	0.02	0.00	242,452	0.06	0.03	0.00	318,879	0.08	0.04	0.01	329,119	0.09	0.04	0.01
TP-DP-22	Twin Peaks Lime Silo	44,222	0.022	0.008	0.008	66,142	0.03	0.01	0.01	121,226	0.06	0.02	0.02	159,440	0.08	0.03	0.03	164,560	0.08	0.03	0.03
TP-DP-23	Splitter into Conveyor C-14	40,010	0.010	0.005	0.001	59,843	0.02	0.01	0.00	109,681	0.03	0.01	0.00	144,255	0.04	0.02	0.00	148,887	0.04	0.02	0.00
TP-DP-24	Lime Silo into Conveyor C-14	44,222	0.012	0.005	0.001	66,142	0.02	0.01	0.00	121,226	0.03	0.01	0.00	159,440	0.04	0.02	0.00	164,560	0.04	0.02	0.00
TP-DP-25	Conveyor C-14 into Conveyor C-15	44,222	0.012	0.005	0.001	66,142	0.02	0.01	0.00	121,226	0.03	0.01	0.00	159,440	0.04	0.02	0.00	164,560	0.04	0.02	0.00
TP-DP-26	Conveyor C-15 into Conveyor C-26	44,222	0.012	0.005	0.001	66,142	0.02	0.01	0.00	121,226	0.03	0.01	0.00	159,440	0.04	0.02	0.00	164,560	0.04	0.02	0.00
TP-DP-27	Conveyor C-26 into Limestone Stockpile	44,222	0.012	0.005	0.001	66,142	0.02	0.01	0.00	121,226	0.03	0.01	0.00	159,440	0.04	0.02	0.00	164,560	0.04	0.02	0.00
TP-DP-28	Limestone Stockpile Loadout	44,222	0.012	0.005	0.001	66,142	0.02	0.01	0.00	121,226	0.03	0.01	0.00	159,440	0.04	0.02	0.00	164,560	0.04	0.02	0.00
TP-DP-29	Loader into Hopper 2	8,423	0.000	0.000	0.000	12,599	0.00	0.00	0.00	23,091	0.00	0.00	0.00	30,369	0.00	0.00	0.00	31,345	0.00	0.00	0.00
TP-DP-30	Hopper 2 into Conveyor C-29	8,423	0.002	0.001	0.000	12,599	0.00	0.00	0.00	23,091	0.01	0.00	0.00	30,369	0.01	0.00	0.00	31,345	0.01	0.00	0.00
TP-DP-31	Conveyor C-29 into Conveyor C-14	8,423	0.002	0.001	0.000	12,599	0.00	0.00	0.00	23,091	0.01	0.00	0.00	30,369	0.01	0.00	0.00	31,345	0.01	0.00	0.00
TP-DP-32	Conveyor C-12 into Conveyor C-25	88,443	0.023	0.011	0.002	132,285	0.03	0.02	0.00	242,452	0.06	0.03	0.00	318,879	0.08	0.04	0.01	329,119	0.09	0.04	0.01
TP-DP-33	Conveyor C-25 into Splitter 2	88,443	0.023	0.011	0.002	132,285	0.03	0.02	0.00	242,452	0.06	0.03	0.00	318,879	0.08	0.04	0.01	329,119	0.09	0.04	0.01
TP-DP-34	Screen S-3	44,222	0.049	0.016	0.001	66,142	0.07	0.02	0.00	121,226	0.13	0.04	0.00	159,440	0.18	0.06	0.00	164,560	0.18	0.06	0.00
TP-DP-35	Screen S-4	44,222	0.049	0.016	0.001	66,142	0.07	0.02	0.00	121,226	0.13	0.04	0.00	159,440	0.18	0.06	0.00	164,560	0.18	0.06	0.00
TP-DP-36	Conveyor C-27 into Conveyor C-28	4,212	0.001	0.000	0.000	6,299	0.00	0.00	0.00	11,545	0.00	0.00	0.00	15,185	0.00	0.00	0.00	15,672	0.00	0.00	0.00
TP-DP-37	Conveyor C-28 into Conveyor C-11	4,212	0.001	0.001	0.000	6,299	0.00	0.00	0.00	11,545	0.00	0.00	0.00	15,185	0.00	0.00	0.00	15,672	0.00	0.00	0.00
TP-DP-38	Conveyor C-27 into Conveyor C-16	4,212	0.001	0.001	0.000	6,299	0.00	0.00	0.00	11,545	0.00	0.00	0.00	15,185	0.00	0.00	0.00	15,672	0.00	0.00	0.00
TP-DP-39	Conveyor C-16 into Product Pile 3	4,212	0.001	0.001	0.000	6,299	0.00	0.00	0.00	11,545	0.00	0.00	0.00	15,185	0.00	0.00	0.00	15,672	0.00	0.00	0.00
TP-DP-40	Product Pile 3 Loadout	4,212	0.001	0.001	0.000	6,299	0.00	0.00	0.00	11,545	0.00	0.00	0.00	15,185	0.00	0.00	0.00	15,672	0.00	0.00	0.00
TP-DP-41	Conveyor C-17 into Conveyor C-20	27,375	0.007	0.003	0.001	40,945	0.01	0.01	0.00	75,045	0.02	0.01	0.00	98,701	0.03	0.01	0.00	101,870	0.03	0.01	0.00
TP-DP-42	Conveyor C-20 into Product Pile 1	27,375	0.007	0.003	0.001	40,945	0.01	0.01	0.00	75,045	0.02	0.01	0.00	98,701	0.03	0.01	0.00	101,870	0.03	0.01	0.00
TP-DP-43	Product Pile 1 Loadout	27,375	0.007	0.003	0.001	40,945	0.01	0.01	0.00	75,045	0.02	0.01	0.00	98,701	0.03	0.01	0.00	101,870	0.03	0.01	0.00
TP-DP-44	Conveyor C-18 into Conveyor C-19	16,846	0.004	0.002	0.000	25,197	0.01	0.00	0.00	46,181	0.01	0.01	0.00	60,739	0.02	0.01	0.00	62,689	0.02	0.01	0.00
TP-DP-45	Conveyor C-19 into Product Pile 2	16,846	0.004	0.002	0.000	25,197	0.01	0.00	0.00	46,181	0.01	0.01	0.00	60,739	0.02	0.01	0.00	62,689	0.02	0.01	0.00
TP-DP-46	Product Pile 2 Loadout	16,846	0.004	0.002	0.000	25,197	0.01	0.00	0.00	46,181	0.01	0.01	0.00	60,739	0.02	0.01	0.00	62,689	0.02	0.01	0.00
TP-DP-47	Conveyor C-21 into Conveyor C-23	9,476	0.002	0.001	0.000	14,173	0.00	0.00	0.00	25,977	0.01	0.00	0.00	34,166	0.01	0.00	0.00	35,263	0.01	0.00	0.00
TP-DP-48	Conveyor C-22 into Conveyor C-23	9,476	0.002	0.001	0.000	14,173	0.00	0.00	0.00	25,977	0.01	0.00	0.00	34,166	0.01	0.00	0.00	35,263	0.01	0.00	0.00
TP-DP-49	Conveyor C-23 into Conveyor C-24	18,952	0.005	0.002	0.000	28,347	0.01	0.00	0.00	51,954	0.01	0.01	0.00	68,331	0.02	0.01	0.00	70,526	0.02	0.01	0.00
TP-DP-50	Conveyor C-24 into Product Pile 4	18,952	0.005	0.002	0.000	28,347	0.01	0.00	0.00	51,954	0.01	0.01	0.00	68,331	0.02	0.01	0.00	70,526	0.02	0.01	0.00
TP-DP-51	Product Pile 4 Loadout	18,952	0.005	0.002	0.000	28,347	0.01	0.00	0.00	51,954	0.01	0.01	0.00	68,331	0.02	0.01	0.00	70,526	0.02	0.01	0.00
Cotton Field Primary and Overland																					
CF-DP1	Excavation of Cotton Field Pit	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP2	Loader Feed to Grizzly F-2	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.00	0.00	0.00	214,361	0.00	0.00	0.00
CF-DP3	Crusher CR-3	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	43,200	0.03	0.01	0.00	57,877	0.03	0.02	0.00
CF-DP4	Grizzly F-2 into Convevor C-30	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	116,800	0.03	0.01	0.00	156,484	0.04	0.02	0.00
CF-DP5	Conveyor C-30 into Conveyor C-31	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP6	Conveyor C-31 to into Conveyor C-32	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP7	Screen S-5	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.18	0.06	0.00	214,361	0.24	0.08	0.01
CF-DP8	Crusher CR-3	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	102,400	0.06	0.03	0.01	137,191	0.08	0.04	0.01
CF-DP9	Convevor C-35 into Convevor C-36	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP10	Conveyor C-36 Conveyor C-37	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP11	Conveyor C-37 Conveyor C-38	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP12	Convevor C-38 to Convevor C-39	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP13	Convevor C-39 to Convevor C-40	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP14	Convevor C-40 to Convevor C-41	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP15	Conveyor C-41 to Conveyor C-42	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP16	Conveyor C-42 to Conveyor C-43	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP17	Convevor C-43 to Convevor C-44	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP18	Convevor C-44 to Convevor C-74	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP19	Conveyor C-74 into Cotton Field Aggregate Storage Pile	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
CF-DP20	Aggregate Storage Pile Loadout	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160,000	0.04	0.02	0.00	214,361	0.06	0.03	0.00
Piles																					
TP-Pile-1	1/2" Screen Fill Pile	3.75	2.53E-01	1.27E-01	1.92E-02	3.75	2.53E-01	1.27E-01	1.92E-02	3.75	2.53E-01	1.27E-01	1.92E-02	3.75	2.53E-01	1.27E-01	1.92E-02	3.75	2.53E-01	1.27E-01	1.92E-02
TP-Pile-2	Product Pile 1	0.84	5.67E-02	2.84E-02	4.30E-03	0.84	5.67E-02	2.84E-02	4.30E-03	0.84	5.67E-02	2.84E-02	4.30E-03	0.84	5.67E-02	2.84E-02	4.30E-03	0.84	5.67E-02	2.84E-02	4.30E-03
TP-Pile-3	Product Pile 2	2.76	1.86E-01	9.32E-02	1.41E-02	2.76	1.86E-01	9.32E-02	1.41E-02	2.76	1.86E-01	9.32E-02	1.41E-02	2.76	1.86E-01	9.32E-02	1.41E-02	2.76	1.86E-01	9.32E-02	1.41E-02
TP-Pile-4	Product Pile 3	2.77	1.87E-01	9.35E-02	1.42E-02	2.77	1.87E-01	9.35E-02	1.42E-02	2.77	1.87E-01	9.35E-02	1.42E-02	2.77	1.87E-01	9.35E-02	1.42E-02	2.77	1.87E-01	9.35E-02	1.42E-02
TP-Pile-5	Product Pile 4	2.32	5.81E-02	2.90E-02	4.40E-03	2.32	5.81E-02	2.90E-02	4.40E-03	2.32	5.81E-02	2.90E-02	4.40E-03	2.32	5.81E-02	2.90E-02	4.40E-03	2.32	5.81E-02	2.90E-02	4.40E-03
TP-Pile-6	Limestone Stockpile	1.03	6.95E-02	3.48E-02	5.27E-03	1.03	6.95E-02	3.48E-02	5.27E-03	1.03	6.95E-02	3.48E-02	5.27E-03	1.03	6.95E-02	3.48E-02	5.27E-03	1.03	6.95E-02	3.48E-02	5.27E-03
CF-Pile-1	Cotton Field Aggregate Storage Pile	0	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	5.50	3.71E-01	1.86E-01	2.81E-02	5.50	3.71E-01	1.86E-01	2.81E-02
Front Loader Road Travel																					
TP-RT-1	Loader Transfer from Twin Peaks Aggregate Plant Feed Stockpile to Hopper 1	210580	0.78	0.20	0.02	314963	1.17	0.30	0.03	577266	2.14	0.55	0.05	759236	2.82	0.72	0.07	783617	2.91	0.74	0.07
TP-RT-2	Loader Transfer from Aggregate Plant Finished Stockpiles to Customer Trucks	210580	0.25	0.06	0.01	314963	9.73	0.10	0.01	577266	0.69	0.18	0.02	759236	0.90	0.23	0.02	783617	0.93	0.24	0.02
TP-RT-3	Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggreeate Plant	210580	5.27	1.34	0.13	314963	0.30	0.08	0.01	577266	14.45	3.68	0.37	759236	19.00	4.84	0.48	783617	19.61	5.00	0.50
TP-RT-4	Loader Travel from Equipment Parking to Pit	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160000	0.74	0.19	0.02	214361	0.74	0.19	0.02
TP-RT-5	Loader Transfer from Cotton Field Pit Face to Grizzly F-2	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	160000	3.01	0.77	0.08	214361	4.03	1.03	0.10
	Total	**-**	**8.26**	**2.50**	**0.29**	**-**	**13.73**	**1.61**	**0.22**	**-**	**21.22**	**6.16**	**0.70**	**-**	**32.58**	**9.42**	**1.07**	**-**	**35.05**	**10.09**	**1.17**

[1] The 2020 throughput for each emission point at the Twin Peaks Aggregate Plant was calculated by multiplying the 2020 throughput of 210,580 tpy times the percentage of material processed. 2020 Twin Peaks throughput per CalPortland's 2020 Annual Emissions Inventory.

[2] The 2021 throughput for each emission point at the Twin Peaks Aggregate Plant was calculated by multiplying the 2021 throughput of 314,963 tpy times the percentage of material processed. 2021 Twin Peaks throughput per CalPortland's 2021 Annual Emissions Inventory.

[3] The 2022 throughput for each emission point at the Twin Peaks Aggregate Plant was calculated by multiplying the 2022 throughput of 577,266 tpy times the percentage of material processed. 2022 Twin Peaks throughput per CalPortland's 2022 Annual Emissions Inventory.

[4] The 2023 throughput for each emission point at the Twin Peaks Aggregate Plant was calculated by multiplying the 2023 throughput of 759,236 tpy times the percentage of material processed. 2023 Twin Peaks throughput provided by Andrew Estrella on 6/10/2025 via email.
The 2023 throughput for each emission point at Cotton Field and Overland was calculated by multiplying the 2023 throughput of 160,000 tpy times the percentage of material processed. 2023 Cotton Field and Overland throughput provided by CalPortland on 7/22/2025 via email.

[5] The 2024 throughput for each emission point at the Twin Peaks Aggregate Plant was calculated by multiplying the 2024 throughput of 783,617 tpy times the percentage of material processed. 2024 Twin Peaks throughput provided by Andrew Estrella on 6/10/2025 via email.
The 2024 throughput for each emission point at Cotton Field and Overland was calculated by multiplying the 2024 throughput of 214,361 tpy times the percentage of material processed. 2024 Cotton Field and Overland throughput provided by CalPortland on 7/22/2025 via email.

[6] Annual emissions for all emission sources were calculated based on the throughput information and the calculated emission factor, except for sources routed to fabric filter controls, which were calculated using the following equation:
Annual emissions (tpy) = Flow Rate (acfm) x Max Outlet Grain Loading (gr/scf) x 60 (min/hr) / 7000 (gr/lb) x Hours of Operation per Year / 2000 (lbs/ton)
Using the parameters below.

TP-DC1 Baghouse:

Max Outlet Grain Loading	0.004	(gr/dscf)	Historical outlet grain loading value revised based on vendor guarantee.
Stack Flow Rate	8395	(cfm)	Flow rate and annual operation hours information per the Facility's PTE workbooks provided by ADEQ on 8/21/2024.
2023 Hours of Operation	900	(hr/yr)	Per CalPortland on 8/15/2025
2024 Hours of Operation	2809	(hr/yr)	Per CalPortland on 8/13/2025

Using the conversion factors given below:

	7000	gr/lb
	2000	lb/ton
	60	min/hr

PM_{10} and $PM_{2.5}$ speciation profiles provided in CARB Profile 373 for Rock Crushers.

PM	1.00
PM_{10}	0.10
$PM_{2.5}$	0.075

[7] Vehicle miles traveled (VMT) for each year were calculated by dividing plant annual throughput by front loader load size and multipying the resulting trip number by front loader round trip distance.

Road Segment	VMTs/yr				
	2020	2021	2022	2023	2024
TP-RT-1	523	783	1,435	1,887	1,948
TP-RT-2	196	294	538	708	730
TP-RT-3	5,091	7,615	13,957	18,357	18,946
TP-RT-4	0	0	0	525	525
TP-RT-5	0	0	0	2,015	2,699

[8] A control factor of 65% was used based on the current authorized control efficiency in the permit based speed restrictions, regular watering, and application of dust suppressants. The value takes into account application intensity and frequency of watering and dust suppresant application.

Table 6f-1. Twin Peaks Existing Sources - Transfer Point Emission Factors and Parameters

Emission Point Number	Description	BAE Emission Factor		
		PM (lb/ton)	PM_{10} (lb/ton)	$PM_{2.5}$ (lb/ton)
Primary Crushing from Quarry				
TP-DP-1	Belt Conveyor B11-BC2 to Belt Conveyor B11-TS-BC1	0.000521	0.000246	0.000037
TP-DP-2	Belt Conveyor B11-TS-BC1 to Belt Conveyor B11-TS-BC2	0.000521	0.000246	0.000037
TP-DP-3	Belt Conveyor B11-TS-BC2 to the Aggregate Plant Feed Stockpile	0.000521	0.000246	0.000037
TP-DP-4	Aggregate Plant Feed Stockpile Loadout	0.000521	0.000246	0.000037
Twin Peaks Rock and Stone Plant				
TP-DP-5	Loader Transfer into Hopper 1	0.000002	0.000002	0.000002
TP-DP-6	Hopper 1 into Conveyor C-1	0.000521	0.000246	0.000037
TP-DP-7	Conveyor C-1 into Conveyor C-2	0.000521	0.000246	0.000037
TP-DP-8	Screen S-1	0.002200	0.000740	0.000050
TP-DP-9	Conveyor C-4 into Conveyor C-3	0.000521	0.000246	0.000037
TP-DP-10	Conveyor C-3 into Conveyor C-13	0.000521	0.000246	0.000037
TP-DP-11	Conveyor C-13 into 1/2" Screen Fill Material Pile	0.000521	0.000246	0.000037
TP-DP-12	1/2" Screen Fill Material Pile Loadout	0.000521	0.000246	0.000037
TP-DP-13	Crusher CR-1	0.001281	0.000128	0.000070
TP-DP-14	Conveyor C-6 into Conveyor C-7	0.000521	0.000246	0.000037
TP-DP-15	Screen S-2	0.002200	0.000740	0.000050
TP-DP-16	Conveyor C-11 into Conveyor C-5	0.000521	0.000246	0.000037
TP-DP-17	Conveyor C-8 into Conveyor C-10	0.000521	0.000246	0.000037
TP-DP-18	Conveyor C-9 into Conveyor C-10	0.000521	0.000246	0.000037
TP-DP-19	Conveyor C-4 into Conveyor C-10	0.000521	0.000246	0.000037
TP-DP-20	Conveyor C-10 into Splitter 1	0.000521	0.000246	0.000037
TP-DP-21	Splitter 1 into Conveyor C-12	0.000521	0.000246	0.000037
TP-DP-22	Twin Peaks Lime Silo	0.000990	0.000340	0.000340
TP-DP-23	Splitter into Conveyor C-14	0.000521	0.000246	0.000037
TP-DP-24	Lime Silo into Conveyor C-14	0.000521	0.000246	0.000037
TP-DP-25	Conveyor C-14 into Conveyor C-15	0.000521	0.000246	0.000037
TP-DP-26	Conveyor C-15 into Conveyor C-26	0.000521	0.000246	0.000037
TP-DP-27	Conveyor C-26 into Limestone Stockpile	0.000521	0.000246	0.000037
TP-DP-28	Limestone Stockpile Loadout	0.000521	0.000246	0.000037
TP-DP-29	Loader into Hopper 2	0.000002	0.000002	0.000002
TP-DP-30	Hopper 2 into Conveyor C-29	0.000521	0.000246	0.000037
TP-DP-31	Conveyor C-29 into Conveyor C-14	0.000521	0.000246	0.000037
TP-DP-32	Conveyor C-12 into Conveyor C-25	0.000521	0.000246	0.000037
TP-DP-33	Conveyor C-25 into Splitter 2	0.000521	0.000246	0.000037
TP-DP-34	Screen S-3	0.002200	0.000740	0.000050
TP-DP-35	Screen S-4	0.002200	0.000740	0.000050
TP-DP-36	Conveyor C-27 into Conveyor C-28	0.000521	0.000246	0.000037
TP-DP-37	Conveyor C-28 into Conveyor C-11	0.000521	0.000246	0.000037
TP-DP-38	Conveyor C-27 into Conveyor C-16	0.000521	0.000246	0.000037
TP-DP-39	Conveyor C-16 into Product Pile 3	0.000521	0.000246	0.000037
TP-DP-40	Product Pile 3 Loadout	0.000521	0.000246	0.000037
TP-DP-41	Conveyor C-17 into Conveyor C-20	0.000521	0.000246	0.000037
TP-DP-42	Conveyor C-20 into Product Pile 1	0.000521	0.000246	0.000037
TP-DP-43	Product Pile 1 Loadout	0.000521	0.000246	0.000037
TP-DP-44	Conveyor C-18 into Conveyor C-19	0.000521	0.000246	0.000037
TP-DP-45	Conveyor C-19 into Product Pile 2	0.000521	0.000246	0.000037
TP-DP-46	Product Pile 2 Loadout	0.000521	0.000246	0.000037
TP-DP-47	Conveyor C-21 into Conveyor C-23	0.000521	0.000246	0.000037
TP-DP-48	Conveyor C-22 into Conveyor C-23	0.000521	0.000246	0.000037
TP-DP-49	Conveyor C-23 into Conveyor C-24	0.000521	0.000246	0.000037
TP-DP-50	Conveyor C-24 into Product Pile 4	0.000521	0.000246	0.000037
TP-DP-51	Product Pile 4 Loadout	0.000521	0.000246	0.000037
Cotton Field Primary and Overland				
CF-DP1	Excavation of Cotton Field Pit	0.000521	0.000246	0.000037
CF-DP2	Loader Feed to Grizzly F-2	0.000002	0.000002	0.000002
CF-DP3	Crusher CR-2	0.001200	0.000540	0.000100
CF-DP4	Grizzly F-2 into Conveyor C-30	0.000521	0.000246	0.000037
CF-DP5	Conveyor C-30 into Conveyor C-31	0.000521	0.000246	0.000037
CF-DP6	Conveyor C-31 to into Conveyor C-32	0.000521	0.000246	0.000037
CF-DP7	Screen S-5	0.002200	0.000740	0.000050
CF-DP8	Crusher CR-3	0.001200	0.000540	0.000100
CF-DP9	Conveyor C-35 into Conveyor C-36	0.000521	0.000246	0.000037
CF-DP10	Conveyor C-36 Conveyor C-37	0.000521	0.000246	0.000037
CF-DP11	Conveyor C-37 Conveyor C-38	0.000521	0.000246	0.000037
CF-DP12	Conveyor C-38 to Conveyor C-39	0.000521	0.000246	0.000037
CF-DP13	Conveyor C-39 to Conveyor C-40	0.000521	0.000246	0.000037
CF-DP14	Conveyor C-40 to Conveyor C-41	0.000521	0.000246	0.000037
CF-DP15	Conveyor C-41 to Conveyor C-42	0.000521	0.000246	0.000037
CF-DP16	Conveyor C-42 to Conveyor C-43	0.000521	0.000246	0.000037
CF-DP17	Conveyor C-43 to Conveyor C-44	0.000521	0.000246	0.000037
CF-DP18	Conveyor C-44 to Conveyor C-74	0.000521	0.000246	0.000037
CF-DP19	Conveyor C-74 into Cotton Field Aggregate Storage Pile	0.000521	0.000246	0.000037
CF-DP20	Aggregate Storage Pile Loadout	0.000521	0.000246	0.000037

Piles				
TP-Pile-1	1/2" Screen Fill Pile	135.063725	67.531863	10.226253
TP-Pile-2	Product Pile 1	135.063725	67.531863	10.226253
TP-Pile-3	Product Pile 2	135.063725	67.531863	10.226253
TP-Pile-4	Product Pile 3	135.063725	67.531863	10.226253
TP-Pile-5	Product Pile 4	50.045701	25.022850	3.789174
TP-Pile-6	Limestone Stockpile	135.063725	67.531863	10.226253
CF-Pile-1	Cotton Field Aggregate Storage Pile	135.063725	67.531863	10.226253
Front Loader Road Travel				
TP-RT-1	Loader Transfer from Twin Peaks Aggregate Plant Feed Stockpile to Hopper 1	0.007422	0.001892	0.000189
TP-RT-2	Loader Transfer from Aggregate Plant Finished Stockpiles to Customer Trucks	0.002382	0.000607	0.000061
TP-RT-3	Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant	0.050048	0.012755	0.001276
TP-RT-4	Loader Travel from Equipment Parking to Pit	0.007914	0.002017	0.000236
TP-RT-5	Loader Transfer from Cotton Field Pit Face to Grizzly F-2	0.037607	0.009585	0.000958

[1] Uncontrolled emission factors using the "drop equation" contained in AP-42, Section 13.2.4 (Aggregate Handling and Storage Piles), November 2006, as follows:

$$E = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (pound [lb]/ton)}$$

Where:
E = Emission factor (lb/ton)
k = Particle size multiplier (dimensionless)

PM	PM_{10}	$PM_{2.5}$
0.74	0.35	0.053

U = Mean wind speed (miles per hour [mph]) 8.039

Per the surface wind speed data obtained from the Tucson Airport meteorological station published by ADEQ for the 2017-2021 period.

M = Material moisture content (%)

Aggregate	Sand
1.77	4.17

Per moisture content of aggregate and sand from AP-42 Table 11.12-2 footnote b)

[2] Crushing, screening, and grizzly emission factors from AP-42, Table 11.19.2-2 were used per historic ADEQ emission factors in "PM EF" tab. The emission factors are inclusive of emissions generated by the drop into the equipment unit and the stone-to-stone attrition during crushing and screening processes.

	PM	PM_{10}	$PM_{2.5}$	
Tertiary crushing (uncontrolled)	0.0054	0.0024	0.0024	$PM_{2.5}$ conservatively assumed to be equal to PM_{10}.
Tertiary crushing (controlled)	0.0012	0.00054	0.00010	
Screening (uncontrolled)	0.025	0.0087	0.00870	$PM_{2.5}$ conservatively assumed to be equal to PM_{10}.
Screening (controlled)	0.0022	0.00074	0.000050	

[3] Lime silo loading emissions (TP-DP-22) emission factors per historical values approved by ADEQ in Permit No. 85424 obtained from AP-42 Section 11.12 Table 11.12-2 for cement unloading to elevated silo (pneumatic) and storage silo (pneumatic).

Table 6f-2. Twin Peaks Existing Sources - Piles Emission Factors and Parameters

Emission Unit ID	Description	Silt Content [1] (%)	f [2] %	Emission Factor [1,2] (lb/day/acre) PM	PM_{10}	$PM_{2.5}$
TP-Pile-1	1/2" Screen Fill Pile	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-2	Product Pile 1	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-3	Product Pile 2	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-4	Product Pile 3	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
TP-Pile-5	Product Pile 4	2.6	0.54	1.37E-01	6.86E-02	1.04E-02
TP-Pile-6	Limestone Stockpile	7.1	0.53	3.70E-01	1.85E-01	2.80E-02
CF-Pile-1	Cotton Field Aggregate Storage Pile	7.1	0.53	3.70E-01	1.85E-01	2.80E-02

[1] Emission factors for storage stockpiles per Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, EPA-450/2-92-004, September 1992.
The PM_{10} emission factor is half the PM emission.

$$EF = 1.7\left(\frac{s}{1.5}\right)\left(\frac{365-P}{235}\right)\left(\frac{f}{15}\right)$$

Where:
EF = PM Emission factor (lb/day/acre)
s = Silt Content (%), for aggregate obtained from AP-42 Section 13.2.1 Table 13.2.1-3 for sand and gravel processing, and for sand obtained from AP-42 Section 13.2.4 Table 13.2.4-1.
f = % of time the unobstructed wind speed exceeds 12 mph at the stockpile height
Based on wind speed data obtained from the ADEQ AERMET data file for Tucson, AZ for the 2017 to 2021 period (anemometer height of 10 m) and has been adjusted for value at each

$$\frac{U_{hub}}{U_{anem}} = \frac{\ln(z_{hub}/z_0)}{\ln(z_{anem}/z_0)}$$

Where:
U_{hub} (m) = Adjusted wind speed at stockpile height
z_0 (m) Surface
z_{hub} (m) = Stockpile height
z_{anem} (m)= Anemometer height
P = Days per year with at least 0.01 inch precipitation (days)
60 Based on AP-42 Figure 13.2.1-2.

[2] Per AP-42, Section 13.2.4, November 2006, the particle size multiplier used for calculating emission factors is as follows:

PM_{10} = 0.35
$PM_{2.5}$ = 0.053

Table 6f-3. Twin Peaks - Material Processing and Handling PM Emissions

Emission Point Number	Description	PM and PM_{10} CHA Throughput [1] (tpy)	$PM_{2.5}$ CHA Throughput [1] (tpy)	Controlled Annual Emissions (tpy) [2]		
				PM	PM_{10}	$PM_{2.5}$
Primary Crushing from Quarry						
TP-DP-1	Belt Conveyor B11-BC2 to Belt Conveyor B11-TS-BC1	28,574	131,749	0.0074	0.0035	0.0025
TP-DP-2	Belt Conveyor B11-TS-BC1 to Belt Conveyor B11-TS-BC2	28,574	131,749	0.0074	0.0035	0.0025
TP-DP-3	Belt Conveyor B11-TS-BC2 to the Aggregate Plant Feed Stockpile	28,574	131,749	0.0074	0.0035	0.0025
TP-DP-4	Aggregate Plant Feed Stockpile Loadout	28,574	131,749	0.0074	0.0035	0.0025
Twin Peaks Rock and Stone Plant						
TP-DP-5	Loader Transfer into Hopper 1	27,431	126,479	0.0000	0.0000	0.0001
TP-DP-6	Hopper 1 into Conveyor C-1	27,431	126,479	0.0071	0.0034	0.0024
TP-DP-7	Conveyor C-1 into Conveyor C-2	27,431	126,479	0.0071	0.0034	0.0024
TP-DP-8	Screen S-1	13,144	60,605	0.0145	0.0049	0.0015
TP-DP-9	Conveyor C-4 into Conveyor C-3	10,686	49,274	0.0028	0.0013	0.0009
TP-DP-10	Conveyor C-3 into Conveyor C-13	10,572	48,747	0.0028	0.0013	0.0009
TP-DP-11	Conveyor C-13 into 1/2" Screen Fill Material Pile	10,572	48,747	0.0028	0.0013	0.0009
TP-DP-12	1/2" Screen Fill Material Pile Loadout	10,572	48,747	0.0028	0.0013	0.0009
TP-DP-13	Crusher CR-1	15,430	71,144	0.0099	0.0010	0.0025
TP-DP-14	Conveyor C-6 into Conveyor C-7	15,430	71,144	0.0040	0.0019	0.0013
TP-DP-15	Screen S-2	15,430	71,144	0.0170	0.0057	0.0018
TP-DP-16	Conveyor C-11 into Conveyor C-5	2,857	13,175	0.0007	0.0004	0.0002
TP-DP-17	Conveyor C-8 into Conveyor C-10	15,144	69,827	0.0039	0.0019	0.0013
TP-DP-18	Conveyor C-9 into Conveyor C-10	2,286	10,540	0.0006	0.0003	0.0002
TP-DP-19	Conveyor C-4 into Conveyor C-10	10,686	49,274	0.0028	0.0013	0.0009
TP-DP-20	Conveyor C-10 into Splitter 1	15,144	69,827	0.0039	0.0019	0.0013
TP-DP-21	Splitter 1 into Conveyor C-12	12,001	55,335	0.0031	0.0015	0.0010
TP-DP-22	Twin Peaks Lime Silo	6,000	27,667	0.0030	0.0010	0.0047
TP-DP-23	Splitter into Conveyor C-14	5,429	25,032	0.0014	0.0007	0.0005
TP-DP-24	Lime Silo into Conveyor C-14	6,000	27,667	0.0016	0.0007	0.0005
TP-DP-25	Conveyor C-14 into Conveyor C-15	6,000	27,667	0.0016	0.0007	0.0005
TP-DP-26	Conveyor C-15 into Conveyor C-26	6,000	27,667	0.0016	0.0007	0.0005
TP-DP-27	Conveyor C-26 into Limestone Stockpile	6,000	27,667	0.0016	0.0007	0.0005
TP-DP-28	Limestone Stockpile Loadout	6,000	27,667	0.0016	0.0007	0.0005
TP-DP-29	Loader into Hopper 2	1,143	5,270	0.0000	0.0000	0.0000
TP-DP-30	Hopper 2 into Conveyor C-29	1,143	5,270	0.0003	0.0001	0.0001
TP-DP-31	Conveyor C-29 into Conveyor C-14	1,143	5,270	0.0003	0.0001	0.0001
TP-DP-32	Conveyor C-12 into Conveyor C-25	12,001	55,335	0.0031	0.0015	0.0010
TP-DP-33	Conveyor C-25 into Splitter 2	12,001	55,335	0.0031	0.0015	0.0010
TP-DP-34	Screen S-3	6,000	27,667	0.0066	0.0022	0.0007
TP-DP-35	Screen S-4	6,000	27,667	0.0066	0.0022	0.0007
TP-DP-36	Conveyor C-27 into Conveyor C-28	571	2,635	0.0001	0.0001	0.0000
TP-DP-37	Conveyor C-28 into Conveyor C-11	571	2,635	0.0001	0.0001	0.0000
TP-DP-38	Conveyor C-27 into Conveyor C-16	571	2,635	0.0001	0.0001	0.0000
TP-DP-39	Conveyor C-16 into Product Pile 3	571	2,635	0.0001	0.0001	0.0000
TP-DP-40	Product Pile 3 Loadout	571	2,635	0.0001	0.0001	0.0000
TP-DP-41	Conveyor C-17 into Conveyor C-20	3,715	17,127	0.0010	0.0005	0.0003
TP-DP-42	Conveyor C-20 into Product Pile 1	3,715	17,127	0.0010	0.0005	0.0003
TP-DP-43	Product Pile 1 Loadout	3,715	17,127	0.0010	0.0005	0.0003
TP-DP-44	Conveyor C-18 into Conveyor C-19	2,286	10,540	0.0006	0.0003	0.0002
TP-DP-45	Conveyor C-19 into Product Pile 2	2,286	10,540	0.0006	0.0003	0.0002
TP-DP-46	Product Pile 2 Loadout	2,286	10,540	0.0006	0.0003	0.0002
TP-DP-47	Conveyor C-21 into Conveyor C-23	1,286	5,929	0.0003	0.0002	0.0001
TP-DP-48	Conveyor C-22 into Conveyor C-23	1,286	5,929	0.0003	0.0002	0.0001
TP-DP-49	Conveyor C-23 into Conveyor C-24	2,572	11,857	0.0007	0.0003	0.0002
TP-DP-50	Conveyor C-24 into Product Pile 4	2,572	11,857	0.0007	0.0003	0.0002
TP-DP-51	Product Pile 4 Loadout	2,572	11,857	0.0007	0.0003	0.0002
Cotton Field Primary and Overland						
CF-DP1	Excavation of Cotton Field Pit	100,011	207,191	0.0260	0.0123	0.0039
CF-DP2	Loader Feed to Grizzly F-2	100,011	207,191	0.0001	0.0001	0.0002
CF-DP3	Crusher CR-2	27,003	55,942	0.0162	0.0073	0.0028
CF-DP4	Grizzly F-2 into Conveyor C-30	73,008	151,250	0.0190	0.0090	0.0028
CF-DP5	Conveyor C-30 into Conveyor C-31	100,011	207,191	0.0260	0.0123	0.0039
CF-DP6	Conveyor C-31 to into Conveyor C-32	100,011	207,191	0.0260	0.0123	0.0039
CF-DP7	Screen S-5	100,011	207,191	0.1100	0.0370	0.0052
CF-DP8	Crusher CR-3	64,007	132,603	0.0384	0.0173	0.0066
CF-DP9	Conveyor C-35 into Conveyor C-36	100,011	207,191	0.0260	0.0123	0.0039
CF-DP10	Conveyor C-36 Conveyor C-37	100,011	207,191	0.0260	0.0123	0.0039
CF-DP11	Conveyor C-37 Conveyor C-38	100,011	207,191	0.0260	0.0123	0.0039
CF-DP12	Conveyor C-38 to Conveyor C-39	100,011	207,191	0.0260	0.0123	0.0039
CF-DP13	Conveyor C-39 to Conveyor C-40	100,011	207,191	0.0260	0.0123	0.0039
CF-DP14	Conveyor C-40 to Conveyor C-41	100,011	207,191	0.0260	0.0123	0.0039
CF-DP15	Conveyor C-41 to Conveyor C-42	100,011	207,191	0.0260	0.0123	0.0039
CF-DP16	Conveyor C-42 to Conveyor C-43	100,011	207,191	0.0260	0.0123	0.0039
CF-DP17	Conveyor C-43 to Conveyor C-44	100,011	207,191	0.0260	0.0123	0.0039
CF-DP18	Conveyor C-44 to Conveyor C-74	100,011	207,191	0.0260	0.0123	0.0039
CF-DP19	Conveyor C-74 into Cotton Field Aggregate Storage Pile	100,011	207,191	0.0260	0.0123	0.0039
CF-DP20	Aggregate Storage Pile Loadout	100,011	207,191	0.0260	0.0123	0.0039

Piles						
TP-Pile-1	1/2" Screen Fill Pile	3.75	3.75	0.25	0.13	0.019
TP-Pile-2	Product Pile 1	0.84	0.84	0.06	0.028	0.004
TP-Pile-3	Product Pile 2	2.76	2.76	0.19	0.09	0.014
TP-Pile-4	Product Pile 3	2.77	2.77	0.19	0.09	0.014
TP-Pile-5	Product Pile 4	2.32	2.32	0.06	0.03	0.004
TP-Pile-6	Limestone Stockpile	1.03	1.03	0.07	0.03	0.005
CF-Pile-1	Cotton Field Aggregate Storage Pile	5.50	5.50	0.37	0.19	0.028
Front Loader Road Travel						
TP-RT-1	Loader Transfer from Twin Peaks Aggregate Plant Feed Stockpile to Hopper 1	28,574	131,749	0.1060	0.0270	0.0125
TP-RT-2	Loader Transfer from Aggregate Plant Finished Stockpiles to Customer Trucks	28,574	131,749	0.0340	0.0087	0.0040
TP-RT-3	Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant	28,574	131,749	0.7150	0.1822	0.0840
TP-RT-4	Loader Travel from Equipment Parking to Pit	100,011	207,191	0.3957	0.1009	0.0244
TP-RT-5	Loader Transfer from Cotton Field Pit Face to Grizzly F-2	100,011	207,191	1.8806	0.4793	0.0993
			Total	**5.04**	**1.71**	**0.43**

[1] The Twin Peaks production growth for each of the years evaluated in the baseline actual emissions determination is as follows:

2021	49.57%	314,963
2022	83.28%	577,266
2023	31.52%	759,236
2024	3.21%	783,617

The Cotton Field production growth for each of the years evaluated in the baseline actual emissions determination is as follows:

2024	33.98%	214,361

The average of these values was multiplied times the 2024 production value, as limited by the allowable limit, to determine the production that could be accomodated due to increased utilization from product demand growth, excluding the Project. The baseline period production was then subtracted from this value.

Twin Peaks	PM and PM_{10} CHA Production (tpy)	28,574
	$PM_{2.5}$ CHA Production (tpy)	131,749
Cotton Field	PM and PM_{10} CHA Production (tpy)	100,011
	$PM_{2.5}$ CHA Production (tpy)	207,191

[2] Annual emissions for all emission sources were calculated based on the throughput information and the BAE emission factor.

Table 7a-1. Inputs - Production

Item	Process Description	Max Process Rate [1]	Units	Notes
Kilns				
1	Kiln 1 Clinker Production	8,760	hrs/yr	Maximum Operation.
		19	tph	Tons of clinker produced per hour.
		166,440	tpy	
2	Kiln 2 Clinker Production	8,760	hrs/yr	Maximum Operation.
		19	tph	Tons of clinker produced per hour.
		166,440	tpy	
3	Kiln 3 Clinker Production	8,760	hrs/yr	Maximum Operation.
		19	tph	Tons of clinker produced per hour.
		166,440	tpy	
4	Kiln 4 Clinker Production	8,760	hrs/yr	Maximum Operation.
		207	tph	Tons of clinker produced per hour. Kiln Feed to Clinker ratio is 1.65.
		1,813,320	tpy	
Finish Mills				
5	CM1	8,760	hrs/yr	
		10	tph	
		87,600	tpy	
6	CM2	8,760	hrs/yr	
		10	tph	
		87,600	tpy	
7	CM3	8,760	hrs/yr	
		10	tph	
		87,600	tpy	
8	CM4	8,760	hrs/yr	
		10	tph	
		87,600	tpy	
9	CM5	8,760	hrs/yr	
		10	tph	
		87,600	tpy	
10	CM6	8,760	hrs/yr	
		10	tph	
		87,600	tpy	
11	CM7	8,760	hrs/yr	
		69	tph	
		604,440	tpy	
12	D2	8,760	hrs/yr	
		155	tph	
		1,357,800	tpy	
13	D3	8,760	hrs/yr	
		150	tph	
		1,314,000	tpy	
Quarry Drilling and Blasting				
14	Drilling	10,049	hrs/yr	77.3 holes/blast.
15	Blasting	130	blasts/yr	
16	Explosives	1,552	tpy	ANFO.
Materials				
Imported Materials				
17	Magnetite / Hematite / Mill scale Iron / Iron to Plant Stockpile - Truck	121,307	tpy	Sum of magnetite, hematite, iron and/or mill scale sources by truck.
18	Magnetite / Hematite / Mill scale Iron / Iron to Plant Stockpile -Rail	142,307	tpy	Sum of magnetite, hematite, iron and/or millscale sources by rail.
19	Bauxite / Alumina to Plant Stockpile - Rail	155,640	tpy	Sum of bauxite and alumina sources by Rail.
20	Iron from Plant Stockpile to Quarry - Truck	5,439	tpy	
21	Mineral Filler - Flyash to Plant Bins - Truck	11,794	tpy	
22	Mineral Filler - Hydrated Lime to Plant Bins - Truck	6,000	tpy	Per Janelle on 11/18/14.
23	Bauxite / Alumina from Plant Stockpile to Quarry - Truck	85,449	tpy	
24	Gypsum - Total Import to Plant Stockpile - Truck	240,000	tpy	All gypsum is imported to the stockpile outside the OH crane building, then moved into the OH Crane building by a front-end loader and conveyor.
25	Imported High-Grade Limestone to Quarry - Truck	250,608	tpy	
26	Coal to Plant Stockpile - Rail	333,823	tpy	All coal imports to the plant are to a stockpile. Combined silo and stockpile tonnages from previous versions of the spreadsheet.
27	Coke / Pet Coke to Plant Stockpile - Rail	57,922	tpy	All coke and pet coke imports to the plant by rail are combined here.
28	Wood Chips / Pecan Shells to Plant Stockpile - Truck	114,400	tpy	New item per e-mails from John Bartolucci.
29	Tire Chips to Plant Stockpile - Truck	94,300	tpy	New item per e-mails from John Bartolucci.
30	Cement Imports to Storage Silos	250,000	tpy	New item - Per Dave; imported cement will be brought in by rail; stored in the existing cement silos; and then exported out by bulk truck. Transfer of cement is directly from railcar into the silo.
31	Grinding Aid - Mortar Additive	203	tpy	According to Russel's vehicle information, this is used as a mortar additive. Assume grinding aid is in liquid form. Tonnage is used for vehicle travel calculations only.
32	Grinding Aid - D2 Mill	203	tpy	According to Russell's vehicle information, this is used at the D2 Mill. Liquid material - tonnage is used for vehicle travel calculations only.
33	REAX	250	tpy	According to Russel's vehicle information, this is used as a mortar additive. Liquid material, tonnage used for vehicle calculations only.
34	Used Oil	3,315	tpy	Assumed 10 tank turnovers for the three large On-Spec Used Oil ASTs, and that oil weighs 7.5 pounds per gallon.
35	Lime	3,066	tpy	Lime injection max 700 lb/hr, 8760 hrs per year.
Processed Materials				
36	Total Waste Rock/Overburden at Quarry	6,290,903	tpy	
37	Waste Rock/Overburden to 111 (Aggregate Dump)	800,000	tpy	
38	Waste Rock/Overburden to 112 (Lower/Upper Ashton)	1,710,993	tpy	
39	Waste Rock/Overburden to 119 (South Crusher Dump)	2,061,338	tpy	
40	Twin Peaks Rock and Stone	800,000	tpy	
41	Waste Rock/Overburden to 108 (North Crusher Dump)	888,572	tpy	
42	Rock Processed at Quarry	3,151,572	tpy	
43	Rock Processed at Quarry in S/R Bldg.	3,151,572	tpy	
44	Low-Grade Limestone at Quarry	118,751	tpy	
45	Low-Grade Limestone from Quarry to S/R Bldg.	118,751	tpy	
46	Low-Grade Limestone to Stockpile	118,751	tpy	
47	Low-Grade Limestone to Hopper	84,888	tpy	
48	Quarry High Lime Rock to Quarry Crusher	60,000	tpy	
49	Imported High Lime Rock to Quarry Crusher	248,120	tpy	
50	High Lime Rock from Quarry Crusher to S/R Bldg.	228,756	tpy	
51	High Lime Rock to D4 Feed Bin from S/R Bldg.	109,687	tpy	
52	High Lime Rock from S/R Bldg. to Stockpile	119,069	tpy	
53	High Lime Rock from Stockpile to D4 Hopper	81,278	tpy	
54	High Lime Rock from Stockpile to D3 Hopper	52,000	tpy	
55	High Lime Rock from Stockpile to Crusher 1	100,000	tpy	
56	High Lime Rock from Quarry Crusher to OH Crane Bldg.	27,611	tpy	
57	High Lime Rock to CM7 Mill in OH Crane Bldg.	35,750	tpy	
58	High Lime Rock to D2 Hopper in OH Crane Bldg.	54,000	tpy	
59	Bauxite / Alumina at Quarry	62,362	tpy	
60	Bauxite / Alumina at Plant	40,989	tpy	Assumed 1/2 is moved from the stockpile to the shelter to the D4 hopper (wet), and 1/2 is moved from the stockpile to the D4 hopper (dry).
61	Bottom Ash at Quarry	4,859	tpy	
62	Magnetite / Hematite/ Iron at Quarry - Total	13,920	tpy	
63	Magnetite / Hematite/ Iron at Quarry - Stockpile to Face to Crusher	8,352	tpy	
64	Magnetite / Hematite / Iron at Plant	86,209	tpy	Includes all iron sources processed at the Plant.
65	Total Gypsum Processed	223,909	tpy	
66	Gypsum to Crusher 1 Hopper	232,909	tpy	
67	Gypsum to D2 Mill	81,000	tpy	
68	Gypsum to Other Finish Mills	156,781	tpy	
69	Coal Processed	346,737	tpy	
70	Coal Mill Rejects	6,935	tpy	
71	Coal Reclaim (60% of Coal Processed)	208,042	tpy	
72	Coke Reclaim	25,564	tpy	
73	Horseshoe to Inert Material Storage	6,000	tpy	
74	Mineral Filler - Flyash	11,777	tpy	
75	Mineral Filler - Hydrated Lime	6,000	tpy	Updated to 6,000 TPY per Janelle on 11/18/2014.
76	Plant to Horseshoe	6,000	tpy	
77	D4 Material Bypass	11,868	tpy	Updated description.
78	C2 Metal Rejects	100	tpy	New per telephone conversation on 11/19/14.
79	Kiln 1 Clinker	173,150	tpy	
80	Kiln 2 Clinker	192,857	tpy	
81	Kiln 3 Clinker	218,713	tpy	
82	Kiln 4 Clinker	1,727,919	tpy	
83	Total Clinker Production	2,312,640	tpy	
84	Clinker from Kiln 1 to OH Crane Bldg.	166,440	tpy	
85	Clinker from Kilns 2-4 to OH Crane Bldg.	2,116,465	tpy	
86	Clinker to OH Crane Bldg. Stockpile	2,221,419	tpy	
87	Clinker to Stockpile	61,579	tpy	
88	Clinker to Reclaim	175,266	tpy	
89	Clinker Conveyor Bypass	29,642	tpy	
90	Clinker to D2 Mill	1,082,110	tpy	
91	Clinker to Other Finish Mills	2,429,178	tpy	
92	Clinker from Plant to Quarry Crusher	1,000	tpy	
93	Kiln Brick	917	tpy	
94	Clay to Quarry	33,746	tpy	
95	Clay at Quarry	32,238	tpy	
96	AB 3/8" + Material from Twin Peaks to Plant - Truck	5,000	tpy	
97	1" HG Limestone from Quarry to Plant - Truck	30,000	tpy	
98	Maximum annual natural fines process rate	876,000	tpy	Per Minor Permit Revision No. 100170 to Permit No. 85424.
99	Maximum annual unscreened aggregate process rate	2,628,000	tpy	Per Minor Permit Revision No. 100170 to Permit No. 85424.
100	Annual throughput of material on Delivery Truck Unloading System B	1,026,958	tpy	Per Rillito MPR Emission Calculations v3.4 submitted to ADEQ on and associated with the February 2025 submitted by CalPortland
Exported Materials				
100	Cement Export - Total Quantity	4,471,265	tpy	
101	Cement Exports - Rail	400,000	tpy	
102	Cement Exports - Bulk Truck	4,009,033	tpy	Added new cement import numbers to the former total here, see above.
103	Cement Exports - Sack Truck	62,232	tpy	
104	Aggregate	800,000	tpy	

[1] Values consistent with the most recent air quality permit renewal application approved by Class I Permit No. 85424 on March 3, 2021

Table 7b-1. Inputs - Storage Piles

Description	Annual Average Surface Area [1] (ft^2)	Annual Average Surface Area [1] (acres)	Silt Content [1] (%)	Notes
Bauxite / Alumina (Plant and Quarry)	65,776	1.51	4.6	Combined plant and quarry and increased to 2019 SLEIS value.
Bottom Ash	13,976	0.32	59.5	No change.
High Rock/High Grade Limestone (Plant and Quarry)	101,495	2.33	0.7	Combined plant and quarry and increased to 2019 SLEIS value.
Low Rock/Low Grade Llimestone	55,689	1.28	0.7	No change.
Clinker	99,136	2.28	17.5	No change.
Clay	16,553	0.38	17.5	Increased to 2019 SLEIS value.
Magnetite / Iron / Iron Pile / Millscale Iron Stockpiles	162,930	3.74	59.5	No change.
Gypsum	18,728	0.43	4.6	Increased stockpile size by 25%.
D3 Hopper Working Pile	1,856	0.04	0.7	No change.
Coal	48,352	1.11	0.4	Increased to 2019 SLEIS value.
Coke / Pet Coke	51,836	1.19	2.4	Increased to 2019 SLEIS value.
Wood Chips/Pecan Shells	3,500	0.08	0.5	Estimated surface area based on throughput; estimated silt content.
Wind Erosion of Fines Storage Pile	43,560	1.00	7.4	Per Minor Permit Revision No. 100170 to Permit No. 85424.

[1] Values consistent with the most recent air quality permit renewal application approved by Class I Permit No. 85424 on March 3, 2021

Table 7c-1. Inputs - Unpaved Roads Vehicle Travel

Source ID	Vehicle Description [1]	Travel Description	Vehicle Weight (tons)				Total Traveled Road Distance [1]	Material Transferred Annual Throughput [1]		Annual Vehicle Miles Traveled [2]
			Empty Weight [1]	Payload [1]	Full Weight	Average Weight	(mi)	Value	Units	VMTs
Imported Materials Plant										
IMP-UP-1	Import/Export Truck	Import/Export Truck- Iron Source to Plant Stockpile - Truck	15	25	40	27.5	1.23	121,307	tpy	5,962
IMP-UP-2	Haul Truck	Haul Truck- Iron Source to Plant Stockpile - Rail	70	87	157	113.5	1.07	142,307	tpy	1,753
IMP-UP-3	Haul Truck	Haul Truck- Bauxite / Alumina Source to Plant Stockpile - Rail	70	87	157	113.5	1.07	155,640	tpy	1,917
IMP-UP-4	Import/Export Truck	Import/Export Truck- Gypsum - Import to Stockpile - Truck	15	25	40	27.5	0.69	240,000	tpy	6,618
IMP-UP-5	Import/Export Truck	Import/Export Truck- Mineral Filler - Flyash to Plant Bins - Truck	15	25	40	27.5	0.82	11,794	tpy	385
IMP-UP-6	Import/Export Truck	Import/Export Truck- Mineral Filler - Hydrated Lime to Plant Bins - Truck	15	25	40	27.5	0.82	6,000	tpy	196
IMP-UP-7	Haul Truck	Haul Truck- Coal to Plant Stockpile - Rail	70	87	157	113.5	0.62	333,823	tpy	2,381
IMP-UP-8	Haul Truck	Haul Truck- Coke / Pet Coke to Plant - Rail	70	87	157	113.5	0.67	57,922	tpy	447
IMP-UP-9	Import/Export Truck	Import/Export Truck- Grinding Aid	15	25	40	27.5	0.21	203	tpy	1.71
IMP-UP-10	Import/Export Truck	Import/Export Truck- Grinding Aid	15	25	40	27.5	0.51	203	tpy	4.15
IMP-UP-11	Import/Export Truck	Import/Export Truck- REAX	15	25	40	27.5	0.21	250	tpy	2.11
IMP-UP-12	Import/Export Truck	Import/Export Truck- Tire/Rubber Chips	15	25	40	27.5	1.68	94,300	tpy	6,322
IMP-UP-13	Import/Export Truck	Import/Export Truck- Wood Chips/Pecan Shells	15	25	40	27.5	1.68	114,400	tpy	7,669
Imported Materials Quarry		-								
IMQ-UP-1	Haul Truck	Haul Truck- Iron from Quarry Stockpile to Plant - Truck	70	87	157	113.5	5.90	5,439	tpy	369
IMQ-UP-2	Haul Truck	Haul Truck- Bauxite / Alumina from Quarry Stockpile to Plant - Truck	70	87	157	113.5	5.98	85,449	tpy	5,877
IMQ-UP-3	Import/Export Truck	Import/Export Truck- Imported High-Grade Limestone to Quarry - Truck	15	25	40	27.5	0.83	250,608	tpy	8,346
IMQ-UP-4	Haul Truck	Haul Truck- 1" H.G. Limestone from Quarry to Plant - Truck	70	87	157	113.5	5.42	30,000	tpy	1,868
Processed Materials Plant		-								
PMP-UP-1	Haul Truck	Haul Truck- Low-Grade Limestone to Stockpile	70	87	157	113.5	0.88	118,751	tpy	1,208
PMP-UP-2	Front-End Loader	Front-End Loader- Low-Grade Limestone to D4 Hopper	81	14	95	88.2	0.37	84,888	tpy	2,183
PMP-UP-3	Haul Truck	Haul Truck- Quarry H.G. Limestone from S/R Bldg. to D4 Stockpile	70	87	157	113.5	0.79	109,687	tpy	992
PMP-UP-4	Front-End Loader	Front-End Loader- Quarry H.G. Limestone from Stockpile to D4 Hopper	81	14	95	88.2	0.30	81,278	tpy	1,716
PMP-UP-5	Import/Export Truck	Import/Export Truck- Imported H.G. Limestone from Source to D3 Stockpile	15	25	40	27.5	1.79	52,000	tpy	3,714
PMP-UP-6	Front-End Loader	Front-End Loader- Imported H.G. Limestone from Stockpile to D3 Working Stockpile	81	14	95	88.2	1.53	52,000	tpy	5,552
PMP-UP-7	Front-End Loader	Front-End Loader- Imported H.G. Limestone from D3 Working Stockpile to D3 Hopper	33	8	41	36.8	0.06	52,000	tpy	397
PMP-UP-8	Import/Export Truck	Import/Export Truck- Imported H.G. Limestone from Source to Crusher 1 Stockpile	15	25	40	27.5	1.92	100,000	tpy	7,673
PMP-UP-9	Front-End Loader	Front-End Loader- Imported H.G. Limestone from Stockpile to Crusher 1	81	14	95	88.2	0.53	100,000	tpy	3,730
PMP-UP-10	Front-End Loader	Front-End Loader- Bauxite / Alumina at Plant (wet conditions)	81	12	93	86.8	1.53	5,000	tpy	660
PMP-UP-11	Front-End Loader	Front-End Loader- Bauxite / Alumina at Plant (wet conditions)	81	12	93	86.8	1.53	5,000	tpy	660
PMP-UP-12	Front-End Loader	Front-End Loader- Bauxite / Alumina at Plant (dry)	81	12	93	86.8	0.53	5,000	tpy	229
PMP-UP-13	Front-End Loader	Front-End Loader- Iron Source at Plant	81	23	104	92.4	0.55	5,000	tpy	120
PMP-UP-14	Front-End Loader	Front-End Loader- Gypsum to Crusher 1 Hopper	81	14	95	88.2	0.18	5,000	tpy	64
PMP-UP-15	Haul Truck	Haul Truck- Coal Mill Rejects	70	87	157	113.5	0.39	5,000	tpy	23
PMP-UP-16	Coal/Coke Reclaim Loader	Coal/Coke Reclaim Loader- Coal Reclaim (Percentage of Coal Processed)	81	11	92	86.5	0.17	5,000	tpy	79
PMP-UP-17	Coal/Coke Reclaim Loader	Coal/Coke Reclaim Loader- Coke Reclaim	26	4	30	27.9	0.25	5,000	tpy	341
PMP-UP-18	Haul Truck	Haul Truck- Horseshoe to Inert Material Storage	70	82	152	111.0	8.89	5,000	tpy	542
PMP-UP-19	Dump Truck (Horseshoe)	Dump Truck (Horseshoe)- Plant to Horseshoe	10	10	20	15.0	2.30	5,000	tpy	1,152
PMP-UP-20	Front-End Loader	Front-End Loader- D4 Material Bypass	81	10	91	86.0	0.76	5,000	tpy	382
PMP-UP-21	Forklift Dump	Forklift Dump- C2 Metal Rejects	7	1	8	7.0	0.65	5,000	tpy	3,262
PMP-UP-22	Front-End Loader	Front-End Loader- Clinker to Stockpile	81	18	99	90.0	0.15	5,000	tpy	40
PMP-UP-23	Front-End Loader	Front-End Loader- Clinker to Reclaim	81	18	99	90.0	0.15	5,000	tpy	40
PMP-UP-24	Dump Truck	Dump Truck- Clinker Conveyor Bypass	10	10	20	15.0	0.19	5,000	tpy	96
PMP-UP-25	Haul Truck	Haul Truck- Clinker from Plant to Quarry Crusher	70	87	157	113.5	6.79	5,000	tpy	390
PMP-UP-26	Haul Truck	Haul Truck- Kiln Brick	70	87	157	113.5	6.56	5,000	tpy	377
PMP-UP-27	Import/Export Truck	Import/Export Truck- Pantano Clay (Alumina) to Quarry	15	25	40	27.5	0.84	5,000	tpy	168
PMP-UP-28	Haul Truck	Haul Truck- Pantano Clay (Alumina) at Quarry	70	82	152	111.0	0.74	5,000	tpy	45
Processed Materials Quarry		-								
PMQ-UP-1	Haul Truck	Haul Truck- Waste Rock/Overburden to 111 (Aggregate Dump)	70	87	157	113.5	2.34	5,000	tpy	134
PMQ-UP-2	Haul Truck	Haul Truck- Waste Rock/Overburden to 112 (Lower/Upper Ashton Dump)	70	87	157	113.5	2.80	5,000	tpy	161
PMQ-UP-3	Haul Truck	Haul Truck- Waste Rock/Overburden to 119 (South Crusher Dump)	70	87	157	113.5	2.80	5,000	tpy	161
PMQ-UP-4	Haul Truck	Haul Truck- Waste Rock/Overburden to 108 (North Crusher Dump)	70	87	157	113.5	2.80	5,000	tpy	161
PMQ-UP-5	Haul Truck	Haul Truck- Rock Processed at Quarry	70	87	157	113.5	1.38	5,000	tpy	79
PMQ-UP-6	Haul Truck	Haul Truck- Low-Grade Limestone at Quarry	70	87	157	113.5	1.41	5,000	tpy	81
PMQ-UP-7	Haul Truck	Haul Truck- Quarry H.G. Limestone to Quarry Crusher	70	87	157	113.5	1.34	5,000	tpy	77
PMQ-UP-8	Haul Truck	Haul Truck- Imported H.G. Limestone to Quarry Crusher	70	87	157	113.5	1.91	5,000	tpy	110
PMQ-UP-9	Haul Truck	Haul Truck- Bauxite / Alumina at Quarry	70	87	157	113.5	1.92	5,000	tpy	111
PMQ-UP-10	Haul Truck	Haul Truck- Magnetite (Iron) Stockpile to Face	70	87	157	113.5	1.88	5,000	tpy	108
PMQ-UP-11	Haul Truck	Haul Truck- Magnetite (Iron) Face to Crusher	70	87	157	113.5	1.41	5,000	tpy	81
PMQ-UP-12	Haul Truck	Haul Truck- AB, 3/8+ Twin Peaks to Plant	70	87	157	113.5	5.42	5,000	tpy	311
PMQ-UP-13	Caterpillar 992 Loader	Fines Screening Process Loader Travel at the Quarry Crusher System	117	21.6	138.3	127.5	0.02	876,000	tpy	811
Non-Material Transport		-								
NM-UP-1	Heavy Duty Truck	Heavy Duty Truck- Blasting materials	10	10	20	15.0	2.48	1,552.00	tpy	385
NM-UP-2	Light Duty Truck	Light Duty Truck- Blasting materials	3	1	4	3.5	2.22	1,552.00	tpy	3,442.03
NM-UP-3	Water truck (small)	Water truck (small)- Small Water Trucks	40.5	0.0	40.5	40.5	2.31	-	-	8,413.66
NM-UP-4	Water truck (large)	Water truck (large)- Large Water Trucks	88.5	0.0	88.5	88.5	2.31	-	-	8,413.66
NM-UP-5	Light duty autos/pick-up trucks at Plant	Light duty autos/pick-up trucks at Plant- N/A	88.5	0.0	88.5	88.5	NA	-	-	8,414.00

[1] Vehicle travel information as identified in the Minor Permit Revision Application No. 96502 to Permit 85424 and incorporating updates from subsequent updates from the Facility's PTE workbooks provided by ADEQ on 8/21/2024, including segment PMQ-UP-13 per the Minor Permit Revision No. 100170 to Permit No. 85424.

[2] Annual vehicle miles traveled (VMT) for each segment were calculated by dividing the respective annual throughput by the vehicle payload and multipying the resulting trip number by the trip distance.

Table 7d-1. Inputs - Paved Roads Vehicle Travel

Source ID	Vehicle Description [1]	Travel Description	Vehicle Weight (tons)				Total Traveled Road Distance [1]	Material Transferred Annual Throughput [1]		Annual Vehicle Miles Traveled [2]
			Empty Weight [1]	Payload [1]	Full Weight	Average Weight	(mi)	Value	Units	miles/year
Imported Materials Plant										
IM-PV-1	Import/Export Truck	Import/Export Truck- Iron Source to Plant Stockpile - Truck	15	25	40	27.5	0.34	121,307	tpy	1,658
IM-PV-2	Import/Export Truck	Import/Export Truck- Gypsum - Import to Stockpile - Truck	15	25	40	27.5	0.34	240,000	tpy	3,280
IM-PV-3	Import/Export Truck	Import/Export Truck- Mineral Filler - Flyash to Plant Bins - Truck	15	25	40	27.5	0.76	11,794	tpy	357
IM-PV-4	Import/Export Truck	Import/Export Truck- Mineral Filler - Hydrated Lime to Plant Bins - Truck	15	25	40	27.5	0.76	6,000	tpy	182
IM-PV-5	Import/Export Truck	Import/Export Truck- Grinding Aid 1	15	25	40	27.5	0.56	203	tpy	5
IM-PV-6	Import/Export Truck	Import/Export Truck- Grinding Aid 2	15	25	40	27.5	0.40	203	tpy	3
IM-PV-7	Import/Export Truck	Import/Export Truck- REAX	15	25	40	27.5	0.56	250	tpy	6
IM-PV-8	Import/Export Truck	Import/Export Truck- Tire/Rubber Chips	15	25	40	27.5	0.34	94,300	tpy	1,289
IM-PV-9	Front-End Loader	Front-End Loader- Tire/Rubber Chips	81	3	84	82.5	0.11	94,300	tpy	3,393
IM-PV-10	Import/Export Truck	Import/Export Truck- Wood Chips/Pecan Shells	15	25	40	27.5	0.34	114,400	tpy	1,563
IM-PV-11	Front-End Loader	Front-End Loader- Wood Chips/Pecan Shells	81	5	86	83.7	0.11	114,400	tpy	2,287
IM-PV-12	Import/Export Truck	Import/Export Truck- Used Oil	15	25	40	27.5	0.68	3,315	tpy	90
Imported Materials Quarry										
IMQ-PV-1	Haul Truck	Haul Truck- Iron from Quarry Stockpile to Plant - Truck	70	87	157	113.5	3.55	5,439	tpy	222
IMQ-PV-2	Haul Truck	Haul Truck- Bauxite / Alumina from Quarry Stockpile to Plant - Truck	70	87	157	113.5	3.55	85,449	tpy	3,485
IMQ-PV-3	Import/Export Truck	Import/Export Truck- Imported High-Grade Limestone to Quarry - Truck	15	25	40	27.5	3.00	250,608	tpy	30,081
IMQ-PV-4	Haul Truck	Haul Truck- 1" H.G. Limestone from Quarry to Plant - Truck	70	87	157	113.5	3.55	30,000	tpy	1,224
Processed Materials Plant										
PMP-PV-1	Haul Truck	Haul Truck- Coal Mill Rejects	70	87	157	113.5	0.07	6,935	tpy	6
PMP-PV-2	Haul Truck	Haul Truck- Horseshoe to Inert Material Storage	70	82	152	111.0	3.55	6,000	tpy	260
PMP-PV-3	Dump Truck (Horseshoe)	Dump Truck (Horseshoe)- Plant to Horseshoe	10	10	20	15.0	1.25	6,000	tpy	752
PMP-PV-4	Forklift Dump	Forklift Dump- C2 Metal Rejects	7	1	8	7.0	0.19	100	tpy	19
PMP-PV-5	Dump Truck	Dump Truck- Clinker Conveyor Bypass	10	10	20	15.0	0.08	29,642	tpy	250
PMP-PV-6	Haul Truck	Haul Truck- Clinker from Plant to Quarry Crusher	70	87	157	113.5	3.55	1,000	tpy	41
PMP-PV-7	Front-End Loader	Front-End Loader- Kiln Brick	33	5	38	35.5	0.14	917	tpy	26
PMP-PV-8	Haul Truck	Haul Truck- Kiln Brick	70	87	157	113.5	3.55	917	tpy	37
PMP-PV-9	Import/Export Truck	Import/Export Truck- Pantano Clay (Alumina) to Quarry	15	25	40	27.5	3.00	33,746	tpy	4,051
PMP-PV-10	Cement Export Truck	Cement Export Truck- Cement Exports - Bulk Truck	13	27	40	26.5	0.64	4,009,033	tpy	94,826
Processed Materials Quarry										
PMQ-PV-1	Haul Truck	AB, 3/8+ Twin Peaks to Plant	70	87	157	113.5	3.55	5,000	tpy	204

[1] Vehicle travel information as identified in the Minor Permit Revision Application No. 96502 to Permit 85424 and incorporating updates from subsequent updates from the Facility's PTE workbooks provided by ADEQ on 8/21/2024.

[2] Annual vehicle miles traveled (VMT) for each segment were calculated by dividing the respective annual throughput by the vehicle payload and multipying the resulting trip number by the trip distance.

Table 7e-1. Inputs - Baghouses

Baghouse ID	Process Area	Hours of Operation	Grain Loading (gr/dscf) [1]	Baghouse Flow Rate (dscfm) [1,2]	Emission Factor (lbs/ton kiln feed) [1]	Kiln Feed [1] (tph)	Consent Decree (CD) Limit	CD Limit Units	Grain Loading for PTE Calculations (gr/dscf)
Emissions Calculated from Grain Loading and Flow Rate									
B2-DC1	Primary Crushing	8,760	0.040	18,922	--	--	None	None	0.04
B3-DC1	Primary Crushing	8,760	0.040	12,434	--	--	None	None	0.04
AC-DC3	Raw Grinding - AC Area	8,760	0.040	18,952	--	--	None	None	0.04
AC1-DC1	Raw Grinding - AC Area	8,760	0.040	18,952	--	--	None	None	0.04
AC2-DC1	Raw Grinding - AC Area	8,760	0.040	7,535	--	--	None	None	0.04
AC3-DC1	Raw Grinding - AC Area	8,760	0.040	4,472	--	--	None	None	0.04
AC4-DC1	Raw Grinding - AC Area	8,760	0.040	4,958	--	--	None	None	0.04
AC-BE2-DC	Raw Grinding - AC Area	8,760	0.040	4,522	--	--	None	None	0.04
B5-DC1	Primary Crushing	8,760	0.040	2,601	--	--	None	None	0.04
B5-DC2	Primary Crushing	8,760	0.040	1,138	--	--	None	None	0.04
B5-DC3	Primary Crushing	8,760	0.040	1,976	--	--	None	None	0.04
B11-DC1	Rock Reclaim	8,760	0.014	5,250	--	--	None	None	0.014
B7-DC1	Rock Reclaim	8,760	0.014	4,175	--	--	None	None	0.014
B8-DC1	Rock Reclaim	8,760	0.040	1,882	--	--	None	None	0.04
B8-DC2	Primary Crushing	8,760	0.040	3,500	--	--	None	None	0.04
B9-DC1	Primary Crushing	8,760	0.040	3,640	--	--	None	None	0.04
B9-DC2	Primary Crushing	8,760	0.040	17,317	--	--	None	None	0.04
B9-DC3	Primary Crushing	8,760	0.040	9,200	--	--	None	None	0.04
B9-DC5	Primary Crushing	8,760	0.040	2,800	--	--	None	None	0.04
C2-DC1	Rock Reclaim	8,760	0.022	1,795	--	--	None	None	0.022
C2-DC2	Rock Reclaim	8,760	0.040	2,775	--	--	0.005	gr/dscf	0.005
C2-DC3	Rock Reclaim	8,760	0.040	--	--	--	0.005	gr/dscf	0.005
C2-DC11	Rock Reclaim	8,760	0.040	2,625	--	--	0.005	gr/dscf	0.005
C2-DC4	Rock Reclaim	8,760	0.040	2,550	--	--	0.005	gr/dscf	0.005
C2-DC6	Rock Reclaim	8,760	0.040	1,833	--	--	0.005	gr/dscf	0.005
C2-DC8	Rock Reclaim	8,760	0.040	2,550	--	--	0.005	gr/dscf	0.005
C2-DC10	Rock Reclaim	8,760	0.040	2,575	--	--	0.005	gr/dscf	0.005
C2-DC5	Rock Reclaim	8,760	0.040	10,862	--	--	0.005	gr/dscf	0.005
C2-DC7	Rock Reclaim	8,760	0.040	2,400	--	--	0.005	gr/dscf	0.005
C2-DC9	Rock Reclaim	8,760	0.040	1,660	--	--	0.005	gr/dscf	0.005
C2-DC12	Rock Reclaim Belt Conv.	8,760	0.040	2,576	--	--	0.005	gr/dscf	0.005
C2-DC13	Rock Reclaim Belt Conv.	8,760	0.040	2,847	--	--	0.005	gr/dscf	0.005
D2-DC1	Raw Grinding - Sec. Crush.	8,760	0.040	20,757	--	--	0.005	gr/dscf	0.005
D2-DC3	Raw Grinding - Sec. Crush.	8,760	0.040	876	--	--	0.005	gr/dscf	0.005
D2-DC5	Raw Grinding - Sec. Crush.	8,760	0.005	1,433	--	--	None	None	0.005
D2-DC6	Raw Grinding - Sec. Crush.	8,760	0.005	1,433	--	--	None	None	0.005
D2-DC7	Raw Grinding - Sec. Crush.	8,760	0.005	1,433	--	--	None	None	0.005
D2-1-DC1	Finish Grinding - D2 Mill	8,760	0.040	11,726	--	--	0.005	gr/dscf	0.005
F2-DC1	Homogenizing Silo - Kiln 4	8,760	0.040	9,600	--	--	0.005	gr/dscf	0.005
F3-DC1	Feed - Kiln 4	8,760	0.040	1,493	--	--	None	None	0.04
F3-DC2	Feed - Kiln 4	8,760	0.040	1,653	--	--	None	None	0.04
H4-DC1	Preheater - Kiln 4	8,760	0.040	1,750	--	--	None	None	0.04
H5-DC1	Preheater - Kiln 4	8,760	0.040	1,289	--	--	None	None	0.04
H2-DC1	Conveyors - Kiln 4	8,760	0.010	3,559	--	--	None	None	0.01
H3-K4-DC1,2	Coal Analysis - Kiln 4	8,760	0.040	20,300	--	--	None	None	0.04
F2-PS-DC2	Proportion. Feed - Kilns 1-3	8,760	0.040	880	--	--	None	None	0.04
F2-PS-DC1	Feed - Kilns 1-3	8,760	0.040	2,403	--	--	None	None	0.04
F2-PS-DC3	Proportion. Feed - Kiln 1	8,760	0.040	1,400	--	--	None	None	0.04
F2-SB2-DC	Proportion. Feed	8,760	0.040	2,700	--	--	None	None	0.04
F3-KS-DC1	Proportion. Feed - Kilns 1-3	8,760	0.040	751	--	--	None	None	0.04
CM-DC4	Finish Grinding - CM Area	8,760	0.040	12,562	--	--	None	None	0.04
CM-DC5	Finish Grinding - CM Area	8,760	0.040	19,312	--	--	None	None	0.04
CM1-DC1	Finish Grinding - CM Area	8,760	0.040	7,283	--	--	None	None	0.04
CM2-DC1	Finish Grinding - CM Area	8,760	0.040	10,358	--	--	None	None	0.04
CM3-DC1	Finish Grinding - CM Area	8,760	0.040	18,952	--	--	None	None	0.04
CM4-DC1	Finish Grinding - CM Area	8,760	0.040	3,681	--	--	None	None	0.04
CM5-DC1	Finish Grinding - CM Area	8,760	0.040	18,952	--	--	None	None	0.04
CM6-DC1	Finish Grinding - CM Area	8,760	0.040	18,952	--	--	None	None	0.04
CM-MA-DC1	Finish Grinding - CM Area	8,760	0.040	1,000	--	--	None	None	0.04
CM-DC8	Finish Grinding - CM Area	8,760	0.040	3,733	--	--	None	None	0.04
CM-DC9	Finish Grinding - CM Area	8,760	0.040	4,730	--	--	None	None	0.04
CM-DC10	Finish Grinding - CM Area	8,760	0.040	4,730	--	--	None	None	0.04
CM-DC11	Finish Grinding - CM Area	8,760	0.040	3,276	--	--	None	None	0.04
CM-DC12	Finish Grinding - CM Area	8,760	0.040	4,730	--	--	None	None	0.04
PH-DC1	Cement Packhouse	8,760	0.040	4,730	--	--	None	None	0.04
PH-DC2	Cement Packhouse	8,760	0.040	5,038	--	--	None	None	0.04
PH-DC3	Cement Packhouse	8,760	0.040	3,416	--	--	None	None	0.04
PH-DC4	Cement Packhouse	8,760	0.040	2,344	--	--	None	None	0.04
PH-DC5	Cement Packhouse	8,760	0.040	6,300	--	--	None	None	0.04
BL-DC1	Bulk Loading	8,760	0.040	2,560	--	--	None	None	0.04
BL-DC2	Bulk Loading	8,760	0.040	2,283	--	--	None	None	0.04
BL-DC3	Bulk Loading	8,760	0.040	2,793	--	--	None	None	0.04

Table 7e-1. Inputs - Baghouses

Baghouse ID	Process Area	Hours of Operation	Grain Loading (gr/dscf) [1]	Baghouse Flow Rate (dscfm) [1,2]	Emission Factor (lbs/ton kiln feed) [1]	Kiln Feed [1] (tph)	Consent Decree (CD) Limit	CD Limit Units	Grain Loading for PTE Calculations (gr/dscf)
BL-DC4	Bulk Loading	8,760	0.040	3,281	--	--	None	None	0.04
BL-DC5	Bulk Loading	8,760	0.040	3,519	--	--	None	None	0.04
BL-DC6	Bulk Loading	8,760	0.040	3,671	--	--	None	None	0.04
BL-DC7	Bulk Loading	8,760	0.040	2,849	--	--	None	None	0.04
BL-SB5-DC1	Bulk Loading	8,760	0.040	3,000	--	--	None	None	0.04
BL-SB5-DC2	Bulk Loading	8,760	0.040	1,342	--	--	None	None	0.04
BL-SB5-DC3	Bulk Loading	8,760	0.040	1,342	--	--	None	None	0.04
H5-5-DC1	Kiln Dust	8,760	0.040	1,863	--	--	None	None	0.04
H5-5-DC2	Dust Bin	8,760	0.040	1,860	--	--	None	None	0.04
CM-DC14	Grinding - CM Area	8,760	0.040	4,730	--	--	None	None	0.04
CM-DC15	Grinding - CM Area	8,760	0.040	4,730	--	--	None	None	0.04
CM-DC16	Grinding - CM Area	8,760	0.040	4,730	--	--	None	None	0.04
D3-1-DC1	Grinding - D3 Mill	8,760	0.040	16,371	--	--	None	None	0.04
D3-1-DC2	Grinding - D3 Mill	8,760	0.040	117,601	--	--	None	None	0.04
D3-1-DC3	Grinding - D3 Mill	8,760	0.040	11,777	--	--	None	None	0.04
D2-PC	D2 Mill Product Collector	8,760	0.004	140,000	--	--	None	None	0.004
CM7-DC1	Finish Grinding - CM Area	8,760	0.040	10,710	--	--	None	None	0.04
CM7-DC2	Finish Grinding - CM Area	8,760	0.040	6,273	--	--	None	None	0.04
CM7-DC3	Finish Grinding - CM Area	8,760	0.040	35,107	--	--	None	None	0.04
H2-DC3	Kiln 4 Clinker Bypass	100	0.040	N/A	--	--	None	None	0.04
H4-K1-DC	Feed - Kiln 1	8,760	0.040	400	--	--	None	None	0.04
H4-K2-DC	Feed - Kiln 2	8,760	0.040	375	--	--	None	None	0.04
H4-K3-DC	Feed - Kiln 3	8,760	0.040	1,400	--	--	None	None	0.04
H2-KB1-DC	Dust Conveyor - Kilns 1-3	8,760	0.040	4,651	--	--	None	None	0.04
H2-KB3-DC	Kilns 2, 3, 4 Clinker Transfer	8,760	0.040	3,000	--	--	None	None	0.04
H2-DC2	Clinker Storage	8,760	0.010	5,338	--	--	None	None	0.01
TP-DC1	Crusher 1 Baghouse	8,760	0.004	8,395	--	--	None	None	0.004
B2-DC2	Dust Collector (B2-DC2)	8,760	0.005	4,000	--	--	None	None	0.005
B2-DC3	Dust Collector (B2-DC3)	8,760	0.005	12,000	--	--	None	None	0.005
ALT-DC1	Alternate Fuel Handling System Baghouse 1	8,760	0.005	4,768	--	--	None	None	0.005
ALT-DC2	Alternate Fuel Handling System Baghouse 2	8,760	0.005	4,768	--	--	None	None	0.005
ALT-DC3	Alternate Fuel Handling System Baghouse 3	8,760	0.005	4,768	--	--	None	None	0.005
ALT-DC4	Alternate Fuel Handling System Baghouse 4	8,760	0.005	4,768	--	--	None	None	0.005
ALT-DC5	Alternate Fuel Handling System Baghouse 5	8,760	0.005	4,768	--	--	None	None	0.005
B2-DC4	Dust Collector B2-DC4	8,760	0.008	2,861	--	--	None	None	0.008
H2-DC4	Dust Collector H2-DC4	8,760	0.010	1,569	--	--	None	None	0.01
Emissions Calculated from Emission Factor Limits and Kiln Feed Rate									
H5-GB	Kiln 4 Stack	8,760	--	189,549	0.30	342	0.008	gr/dscf	0.008
H2-GB	Cooler - Kiln 4	8,760	--	N/A	0.10	342	None	None	--
H5-5-GB	Kilns 1-3	8,760	--	143,662	0.30	90	0.008	gr/dscf	0.008
H2-1-DC	Cooler - Kiln 1	8,760	--	N/A	0.10	30	None	None	--
H2-2-DC	Cooler - Kiln 2	8,760	--	N/A	0.10	30	None	None	--
H2-3-DC	Cooler - Kiln 3	8,760	--	N/A	0.10	30	None	None	--
Emissions Calculated from Permit Emission Rate Limits									
D4-DC2	Raw Material Trans.	8,760	--	8,693	--	--	0.005	gr/dscf	0.005
D4-DC1	Raw Material Trans.	8,760	--	5,091	--	--	0.005	gr/dscf	0.005
C2-DC3	Raw Material Trans.	8,760	--	11,067	--	--	0.005	gr/dscf	0.005
F2-DC4	Raw Meal Trans./Weighing	8,760	--	718	--	--	0.005	gr/dscf	0.005
AC-DC1	Raw Meal Trans./Weighing	8,760	--	3,889	--	--	0.005	gr/dscf	0.005
CM-DC17	Cement Trans.	8,760	--	3,897	--	--	0.005	gr/dscf	0.005
D2-DC4	Cement Trans.	8,760	--	1,517	--	--	0.005	gr/dscf	0.005

[1] Values consistent with the most recent air quality permit renewal application approved by Class I Permit No. 85424 on March 3, 2021. Input parameters for B2-DC2, B2-DC3, B2-DC4 obtained from the application approved by ADEQ via Minor Permit Revision No. 100170 to Permit No. 85424. Input parameters for the Alternate Fuel Handling System Baghouses per the February 2025 Minor Permit Revision submitted by CalPortland to ADEQ.

[2] For baghouses that have an applicable consent decree limit, the maximum flowrate observed during any source test was used as the baghouse flow rate.

Baghouse ID	Average Flow Rate Measured During All Souce Tests (dscfm)	Maximum Flow Rate Measured During Any Source Test (dscfm)
H5-5-GB	132,209	143,662
H5-GB	152,853	189,549
C2-DC3	6,930	11,067
D4-DC2	4,874	5,091
D4-DC1	7,845	8,693
F2-DC4	467	718
AC-DC1	3,304	3,889
CM-DC17	3,529	3,897
D2-DC4	1,340	1,517

Table 7f-1. Inputs - Fuel Burning Equipment

Equipment [1,2]	Quantity [1]	Fuel Type	Heating Value [3]	Heating Value Units [3]	Heat Input Rating per Unit [1]	Total Heat Input Rating [1]	Heat Input Rating Units [4]	Total Heat Input Rating in MMBtu/hr	Annual Hours of Operation [1]	Total Annual Heat Input (MMBtu) [1]	Total Annual Natural Gas Usage (MMscf) [1]
Small (< 100 MMBtu/hr) Uncontrolled Boilers											
Bunker C Boiler	1	Natural Gas	1,020	MMBtu/MMscf	6.275	6.275	MMBtu/hr	6.275	8,760	54,969	53.89
Central Control Heating Boiler	1	Natural Gas	1,020	MMBtu/MMscf	0.825	0.825	MMBtu/hr	0.825	8,760	7,227	7.09
D4-RM1-HTR	1	Natural Gas	1,020	MMBtu/MMscf	75	75	MMBtu/hr	75	8,760	657,000	644.12
Separator Heaters (AC Mills)	4	Natural Gas	1,020	MMBtu/MMscf	2	8	MMBtu/hr	8	8,760	70,080	68.71
Direct Fired Heaters	2	Natural Gas	1,020	MMBtu/MMscf	2	4	MMBtu/hr	4	8,760	35,040	34.35
Elevator Heaters (AC Mills)	4	Natural Gas	1,020	MMBtu/MMscf	0.5	2	MMBtu/hr	2	8,760	17,520	17.18
Furnaces (< 0.3 MMBtu/hr) Uncontrolled											
Water Heater	1	Natural Gas	1,020	MMBtu/MMscf	0.075	0.075	MMBtu/hr	0.075	8,760	657	0.64
Water Heater	1	Natural Gas	1,020	MMBtu/MMscf	0.046	0.046	MMBtu/hr	0.046	8,760	403	0.40
Water Heater	1	Natural Gas	1,020	MMBtu/MMscf	0.04	0.04	MMBtu/hr	0.04	8,760	350	0.34
Unit Heater	1	Natural Gas	1,020	MMBtu/MMscf	0.3	0.3	MMBtu/hr	0.3	8,760	2,628	2.58
Unit Heater	3	Natural Gas	1,020	MMBtu/MMscf	0.25	0.75	MMBtu/hr	0.75	8,760	6,570	6.44
Carpenter Shop Unit Heater	1	Natural Gas	1,020	MMBtu/MMscf	0.1	0.1	MMBtu/hr	0.1	8,760	876	0.86
Unit Heater	2	Natural Gas	1,020	MMBtu/MMscf	0.075	0.15	MMBtu/hr	0.15	8,760	1,314	1.29
Radiant Heaters	7	Natural Gas	1,020	MMBtu/MMscf	0.03	0.21	MMBtu/hr	0.21	8,760	1,840	1.80
Office Furnace	1	Natural Gas	1,020	MMBtu/MMscf	0.18	0.18	MMBtu/hr	0.18	8,760	1,577	1.55
Office Furnaces	2	Natural Gas	1,020	MMBtu/MMscf	0.08	0.16	MMBtu/hr	0.16	8,760	1,402	1.37
Office Furnace	1	Natural Gas	1,020	MMBtu/MMscf	0.05	0.05	MMBtu/hr	0.05	8,760	438	0.43
Furnaces	3	Natural Gas	1,020	MMBtu/MMscf	0.04	0.12	MMBtu/hr	0.12	8,760	1,051	1.03
Furnaces	3	Natural Gas	1,020	MMBtu/MMscf	0.025	0.075	MMBtu/hr	0.075	8,760	657	0.64
Emergency Generator Engines											
T1-MG1 - Diesel Emergency Generator	1	Diesel	0.138	MMBtu/gal	250	250	hp	1.75	500	875	NA
H3-K-MG - Natural Gas Motor Generator	1	Natural Gas	1,020	MMBtu/MMscf	134	134	hp	0.938	500	469	NA
H3-K4-AUX - Natural Gas Auxiliary Engine	1	Natural Gas	1,020	MMBtu/MMscf	70	70	hp	0.49	500	245	NA
BL-MG1 Natural Gas Engine Driven Generator	1	Natural Gas	1,020	MMBtu/MMscf	675	675	hp	4.725	500	2,363	NA
AGG-Gen	1	Diesel	0.138	MMBtu/gal	1500	1500	hp	10.5	8760	91,980	NA

[1] Values consistent with the most recent air quality permit renewal application approved by Class I Permit No. 85424 on March 3, 2021. AGG-Gen parameters per Revision No. 97981 to Permit No. 85424 .

[2] D4-RM1-HTR is heater for D4 mill and vents to baghouse and through stack.

[3] Natural gas heating value per U.S. AP-42 Section 1.4 Table 1.4-1. footnote a.

[4] Brake-specific fuel consumption of 7,000 Btu/hp-hr for diesel engines and 10,500 Btu/hp-hr for natural gas engines, per AP-42, Appendix A.

Table 7f-2. GHG Emission Factors - Emergency Generator Engines

Equipment	CO_2 (lb/hp-hr) [1,2]	CH_4 (lb/hp-hr) [1,2]	N_2O (lb/hp-hr) [1,2]
T1-MG1 - Diesel Emergency Generator	1.141	4.63E-05	9.26E-06
H3-K-MG - Natural Gas Motor Generator	1.228	2.31E-05	2.31E-06
H3-K4-AUX - Natural Gas Auxiliary Engine	1.228	2.31E-05	2.31E-06
BL-MG1 Natural Gas Engine Driven Generator	1.228	2.31E-05	2.31E-06

[1] Values consistent with the most recent air quality permit renewal application approved by Class I Permit No. 85424 on March 3, 2021

[2] 40 CFR 98, Subpart C, Tables C-1 and C-2 - GHG Emission Factors converted to units of (lb/hp-hr)from kg/MMBtu using the following inputs

	Default High Heat Value (MMBtu/gal or MMBtu/scf)	
Distillate Fuel Oil No. 2	0.138	Distillate Fuel Oil No. 2 heat value per 40 CFR Part 98 Subpart C, Table C-1.
Natural Gas	0.001026	Natural Gas heat value per 40 CFR Part 98 Subpart C, Table C-1.

Default CO_2 Emission Factor (kg CO_2/MMBtu)	
73.96	Per 40 CFR 98 Table C-1 to Subpart C for Distillate Fuel Oil No. 2.
53.06	Per 40 CFR 98 Table C-1 to Subpart C.
Default CH_4 Emission Factor (kg CH_4/MMBtu)	
0.003	Per 40 CFR 98 Table C-2 to Subpart C for Petroleum Products.
0.001	Per 40 CFR 98 Table C-2 to Subpart C.
Default N_2O Emission Factor (kg N_2O/MMBtu)	
0.0006	Per 40 CFR 98 Table C-2 to Subpart C for Petroleum Products.
0.0001	Per 40 CFR 98 Table C-2 to Subpart C.

Table 7g-1. Inputs - Maximum Kiln Firing Rates

System / Equipment	Maximum Hourly Rate (MMBtu/hr) [1]	Maximum Annual Rate (MMBtu/yr) [1]	% Used for Process Heat [1]
Kiln 1	130	1,138,800	100
Kiln 2	130	1,138,800	100
Kiln 3	130	1,138,800	100
Kiln 4	518	4,537,680	100

[1] Values consistent with the most recent air quality permit renewal application approved by Class I Permit No. 85424 on March 3, 2021

Table 7g-2. Inputs - Kiln GHG Emission Factors

Kiln ID	CO_2 Emission Factor [1] (lb/hr)	CH_4 Emission Factor [1] (kg CH_4/mmBtu)	N_2O Emission Factor [1] (kg N_2O/mmBtu)
1	6,350	0.65	9.43E-02
2	6,350	0.65	9.43E-02
3	6,350	0.65	9.43E-02
4	24,645	2.58	0.38

[1] Values consistent with the most recent air quality permit renewal application approved by Class I Permit No. 85424 on March 3, 2021

Table 7h-1. Inputs - Storage Tanks

Tank Type	Capacity (gallons) [1]	Equipment	Material Stored	Total Throughput (gallons/yr) [1]	Speciated Compound	Emissions [2] (lbs/yr)		Total Emissions (lbs/yr)	Emission Factor (lbs/hr)	Notes
						Working Loss	Breathing Loss			
AST at Quarry	50,000	50000 AST at Quarry	Diesel	500,000	Total Emissions - VOCs	14.33	15.23	29.56	3.37E-03	
					Hexane (-n)	0.01	0.01	0.02	2.28E-06	
					Benzene	0.03	0.03	0.06	6.85E-06	
					Toluene	0.33	0.35	0.68	7.76E-05	
					Ethylbenzene	0.05	0.05	0.1	1.14E-05	
					Xylene (-m)	0.85	0.90	1.75	2.00E-04	
					1,2,4-Trimethylbenzene	0.70	0.74	1.44	1.64E-04	Not a HAP
					Unidentified Components	12.36	13.15	25.51	2.91E-03	Not a HAP / Not Speciated
AST at Plant	12,000	12000 AST at Plant	Diesel	120,000	Total Emissions - VOCs	3.44	3.89	7.33	8.37E-04	
					Hexane (-n)	0	0	0	0.00E+00	
					Benzene	0.01	0.01	0.02	2.28E-06	
					Toluene	0.08	0.09	0.17	1.94E-05	
					Ethylbenzene	0.01	0.01	0.02	2.28E-06	
					Xylene (-m)	0.2	0.23	0.43	4.91E-05	
					1,2,4-Trimethylbenzene	0.17	0.19	0.36	4.11E-05	Not a HAP
					Unidentified Components	2.97	3.36	6.33	7.23E-04	Not a HAP / Not Speciated
AST	31,000	31000 AST	On Spec Used Oil	310,000	Total Emissions - VOCs	0.09	0.09	0.18	2.05E-05	
AST	28,700	28700 AST	On Spec Used Oil	287,000	Total Emissions - VOCs	0.08	0.08	0.16	1.83E-05	
AST	28,700	28700 AST	On Spec Used Oil	287,000	Total Emissions - VOCs	0.08	0.08	0.16	1.83E-05	
AST	2,000	2000 AST	Gasoline	20,000	Total Emissions - VOCs	105.23	815.99	921.22	1.05E-01	Emissions totalled from all gasoline RVPs.
					1,2,4-Trimethylbenzene	0.02	0.14	0.15	1.75E-05	Not a HAP
					Benzene	0.62	4.85	5.48	6.25E-04	
					Cyclohexane	0.09	0.67	0.75	8.58E-05	Not a HAP
					Ethylbenzene	0.05	0.38	0.43	4.90E-05	
					Hexane (-n)	0.56	4.33	4.89	5.58E-04	
					Isooctane	0	0	0	0.00E+00	HAP - AKA 2,2,4-Trimethylpentane
					Isopropyl Benzene	0.0080	0.0622	0.0701	8.01E-06	HAP - AKA Cumene
					Toluene	0.71	5.55	6.26	7.15E-04	
					Unidentified Components	102.97	798.42	901.39	1.03E-01	Not a HAP / Not Speciated
					Xylene (-m)	0.20	1.59	1.80	2.05E-04	
AST	1,000	1000 AST	Lube Oil	10,000	Total Emissions - VOCs	0.0028	0.0033	0.0061	6.97E-07	
AST	1,000	1000 AST	Lube Oil	10,000	Total Emissions - VOCs	0.0028	0.0033	0.0061	6.97E-07	
AST	1,000	1000 AST	Lube Oil	10,000	Total Emissions - VOCs	0.0028	0.0033	0.0061	6.97E-07	
AST	1,000	1000 AST	Lube Oil	10,000	Total Emissions - VOCs	0.0028	0.0033	0.0061	6.97E-07	
AST	1,000	1000 AST	Lube Oil	10,000	Total Emissions - VOCs	0.0028	0.0033	0.0061	6.97E-07	
AST	1,000	1000 AST	Lube Oil	10,000	Total Emissions - VOCs	0.0028	0.0033	0.0061	6.97E-07	
AST	2,000	2000 AST	Used Oil	20,000	Total Emissions - VOCs	0.0020	0	0.0020	2.30E-07	
AST	2,000	2000 AST	Used Oil	20,000	Total Emissions - VOCs	0.0057	0.0065	0.0122	1.39E-06	
AST	2,100,000	2100000 AST	Bunker C	N/A	---	---	---	---		Tank is out of service

[1] Values consistent with the most recent air quality permit renewal application approved by Class I Permit No. 85424 on March 3, 2021

[2] Historical emissions consistent with the most recent air quality permit renewal application approved by Class I Permit No. 85424 on March 3, 2021 and calculated using EPA TANKS Version 4.09 program assuming continuous operation (8,760 hours per year).For Gasoline AST, used RVP data from Kinder Morgan Specification Manual for the Tucson Area.

AST = Above ground storage tank

Table 8a. Facility Particulate Emission Factors - Excluding Twin Peaks Aggregate Plant and Cotton Field Primary and Overland

Process Code	Process Description	Emission Factors				Production Rate Units	Particulate Matter Emission Factor Inputs [a]																		Reference
		PM	PM_{10}	$PM_{2.5}$	Units		k (PM)	k (PM_{10})	k ($PM_{2.5}$)	U (mph)	M (%)	W (tons)	s (%)	f (%)	Baghouse - Maximum Outlet Grain Loading (gr/dscf)	Baghouse - Air Flow (dscfm)	sL (g/m^2)	P (days/yr)	A (ft^2)	a (PM)	a (PM_{10})	a ($PM_{2.5}$)	b (PM)	b (PM_{10})	b ($PM_{2.5}$)	
Mining Operations																									
Blasting	Blasting	112	58.24	3.36	lbs/blast	blasts	1	0.52	0.03										40,000							AP-42, Table 11.9-1 (10/98)
Drilling	Drilling	1.30	0.58	0.11	lbs/hole	holes	1	0.44	0.083																	AP-42, Table 11.9-4 (10/98) and particle size fractions from AP-42, Table 11.9.2-2 (08/04), Tertiary Crushing
Material Transfer Operations																									
AggTrnsfr	Material Transfer of Aggregate (Unprotected)	0.0052	0.0025	0.00037	lbs/ton	tons	0.74	0.35	0.053	8.039	1.77															AP-42, Section 13.2.4, Expression 1 (11/06)
Alumina	Bauxite / Alumina Material Transfers	0.00054	0.00026	0.000039	lbs/ton	tons	0.74	0.35	0.053	8.039	8.9															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
BottAsh	Bottom Ash Material Transfers	0.000095	0.000045	0.0000068	lbs/ton	tons	0.74	0.35	0.053	8.039	30.82															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
Cement	Pneumatic Cement Transfer	0.00099	0.00034	0.000071	lbs/ton	tons			0.072																	AP-42, Section 11.12, Table 11.12-2 (06/06) - cement unloading to elevated storage silos (pneumatic) - controlled; particle size fractions from AP-42, Section 13.2.4, Expression 1 (11/06)
Clay	Clay Material Transfers	0.0023	0.00108	0.00016	lbs/ton	tons	0.74	0.35	0.053	8.039	3.20															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
Clinker	Clinker Material Transfers	0.29	0.14	0.021	lbs/ton	tons	0.74	0.35	0.053	8.039	0.10															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
ClinkerReclaim	Reclaimed Clinker Material Transfers	0.038	0.018	0.0027	lbs/ton	tons	0.74	0.35	0.053	8.039	0.43															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
Coal	Coal Material Transfers	0.0012	0.00057	0.000087	lbs/ton	tons	0.74	0.35	0.053	8.039	5.01															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
CoalReclaim	Coal Mill Reject and Coal Mill Reclaim Material Transfers	0.0031	0.0015	0.00022	lbs/ton	tons	0.74	0.35	0.053	8.039	2.58															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
Coke	Coke / Pet Coke Material Transfers	0.00093	0.00044	0.000066	lbs/ton	tons	0.74	0.35	0.053	8.039	6.08															AP-42, Section 13.2.4, Expression 1 (11/06); moisture content assumed to be equivalent to petroleum coke.
D4Bypass	D4 Material Bypass - Material Transfers	0.0093	0.0044	0.00067	lbs/ton	tons	0.74	0.35	0.053	8.039	1.17															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
Gypsum	Gypsum Material Transfers	0.0021	0.00101	0.00015	lbs/ton	tons	0.74	0.35	0.053	8.039	3.34															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
HighGradeLime	High Lime Rock Material Transfers (unprocessed)	0.045	0.021	0.0032	lbs/ton	tons	0.74	0.35	0.053	8.039	0.38															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
Inert	Inert Material Transfers	0.081	0.038	0.0058	lbs/ton	tons	0.74	0.35	0.053	8.039	0.25															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
Iron	Iron Materials, including Magnetite, Hematite, and Millscale Iron Material Transfers	0.014	0.0065	0.00098	lbs/ton	tons	0.74	0.35	0.053	8.039	0.89															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
LimeTr	Transfer of Lime to Lime Bin	0.61	0.21	0.032	lbs/ton	tons	1	0.35	0.053																	AP-42 Table 11.17-4 (02/98) for product loading enclosed truck, particle size fractions from AP-42 Section 13.2.4, Expression 1 (11/06).
LowGradeLime	Low-Grade Limestone Material Transfers (unprocessed)	0.019	0.0090	0.0014	lbs/ton	tons	0.74	0.35	0.053	8.039	0.7															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
MinFly	Mineral Filler Flyash Material Transfers	0.0089	0.0049	0.00064	lbs/ton	tons			0.072																	AP-42, Table 11.12-2 (06/06), Cement Supplement Unloading to Elevated Storage Silo (pneumatic, controlled), particle size fractions from AP-42, Section 13.2.4, Expression 1 (11/06). Emissions from this bin are controlled by baghouse CM-MA-DC1.
MinLime	Mineral Filler Hydrated Lime Transfers	0.0089	0.0049	0.00064	lbs/ton	tons			0.072																	AP-42, Table 11.12-2 (06/06), Cement Supplement Unloading to Elevated Storage Silo (pneumatic, controlled), particle size fractions from AP-42, Section 13.2.4, Expression 1 (11/06). Emissions from this bin are controlled by baghouse CM-MA-DC1.
Rock	Rock Material Transfers (unprocessed materials)	0.0063	0.0030	0.00045	lbs/ton	tons	0.74	0.35	0.053	8.039	1.54															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
TireChip	Tire Chip Material Transfers	0.0012	0.00058	0.000087	lbs/ton	tons	0.74	0.35	0.053	8.039	5															AP-42, Section 13.2.4, Expression 1 (11/06); estimated moisture content
WasteRock	Waste Rock Material Transfers	0.0103	0.0049	0.00074	lbs/ton	tons	0.74	0.35	0.053	8.039	1.09															AP-42, Section 13.2.4, Expression 1 (11/06); Historical moisture content information from sampling at facility.
WoodChip	Wood Chip / Pecan Shell Material Transfers	0.060	0.022	0.022	lbs/ton	tons	1	0.36	0.36																	Emission Factor adapted from AP-42 Section 19.10.2.1, Table 19.10.2.1-1 (01/95) (Almond Unloading to Receiving Pit); PM_{10} particle size fraction information from EPA WebFIRE database for sawdust pile handling (SCC 3-07-008-03) - $PM_{2.5}$ assumed to be equal to PM_{10}.
AltFuelsDeliv	Alternative Fuels Material Transfers	0.00063	0.000298	0.000045	lbs/ton	tons	0.74	0.35	0.053	8.039	8.00															Uncontrolled emission factors using the "drop equation" contained in AP-42, Section 13.2.4 (Aggregate Handling and Storage Piles), November 2006, consistent with minor permit revision (MPR) submitted by CalPortland in February 2025. Material moisture content (%), see Table B-2F for woodchips.
CoalTransfer	Coal Material Transfers	0.00121	0.000574	0.000087	lbs/ton	tons	0.74	0.35	0.053	8.039	5.01															Uncontrolled emission factors using the "drop equation" contained in AP-42, Section 13.2.4 (Aggregate Handling and Storage Piles), November 2006, consistent with minor permit revision (MPR) submitted by CalPortland in February 2025.
Wind Erosion of Stockpiles (Plant and Quarry)																									
WindAlum	Wind Erosion of Bauxite / Alumina Stockpile	6.68	3.34	0.50	lbs/acre-day	acres	1	0.50	0.075				4.6	14.8				60								4th Edition of AP-42, Section 11.2.3, particle size fractions from AP-42, Section 13.2.5 (11/06)
WindAsh	Wind Erosion of Bottom Ash Stockpile	86.35	43.18	6.48	lbs/acre-day	acres	1	0.50	0.075				59.5	14.8				60								4th Edition of AP-42, Section 11.2.3, particle size fractions from AP-42, Section 13.2.5 (11/06)
WindClay	Wind Erosion of Clay Stockpile	25.40	12.70	1.90	lbs/acre-day	acres	1	0.50	0.075				17.5	14.8				60								4th Edition of AP-42, Section 11.2.3, particle size fractions from AP-42, Section 13.2.5 (11/06)
WindClinker	Wind Erosion of Clinker Stockpile	25.40	12.70	1.90	lbs/acre-day	acres	1	0.50	0.075				17.5	14.8				60								4th Edition of AP-42, Section 11.2.3, particle size fractions from AP-42, Section 13.2.5 (11/06)
WindCoal	Wind Erosion of Coal Stockpile	0.62	0.31	0.047	lbs/acre-day	acres	1	0.50	0.075				0.4	14.8				60								4th Edition of AP-42, Section 11.2.3, particle size fractions from AP-42, Section 13.2.5 (11/06)
WindCoke	Wind Erosion of Coke / Pet Coke Stockpile	3.48	1.74	0.26	lbs/acre-day	acres	1	0.50	0.075				2.4	14.8				60								4th Edition of AP-42, Section 11.2.3, particle size fractions from AP-42, Section 13.2.5 (11/06)
WindD3	Wind Erosion of D3 Hopper Working Pile	0.97	0.49	0.073	lbs/acre-day	acres	1	0.50	0.075				0.7	14.8				60								4th Edition of AP-42, Section 11.2.3, particle size fractions from AP-42, Section 13.2.5 (11/06)
WindGypsum	Wind Erosion of Gypsum Stockpile	6.68	3.34	0.50	lbs/acre-day	acres	1	0.50	0.075				4.6	14.8				60								4th Edition of AP-42, Section 11.2.3, particle size fractions from AP-42, Section 13.2.5 (11/06)
WindHigh	Wind Erosion of High Rock / High-Grade Limestone Stockpile	0.97	0.49	0.073	lbs/acre-day	acres	1	0.50	0.075				0.7	14.8				60								4th Edition of AP-42, Section 11.2.3, particle size fractions from AP-42, Section 13.2.5 (11/06)
WindIron	Wind Erosion of Magnetite / Hematitie / Iron Material Stockpiles	86.35	43.18	6.48	lbs/acre-day	acres	1	0.50	0.075				59.5	14.8				60								4th Edition of AP-42, Section 11.2.3, particle size fractions from AP-42, Section 13.2.5 (11/06)
WindLow	Wind Erosion of Low Rock / Low-Grade Limestone Stockpile	0.97	0.49	0.073	lbs/acre-day	acres	1	0.50	0.075				0.7	14.8				60								4th Edition of AP-42, Section 11.2.3, particle size fractions from AP-42, Section 13.2.5 (11/06)
WindWChips	Wind Erosion of Wood Chip / Pecan Shell Stockpile	0.73	0.36	0.054	lbs/acre-day	acres	1	0.50	0.075				0.5	14.8				60								4th Edition of AP-42, Section 11.2.3, particle size fractions from AP-42, Section 13.2.5 (11/06)
AWindAgg	Annual Wind Erosion of Aggregate Fines Stockpiles	10.74	5.37	0.805	lbs/acre-yr	acres	1	0.50	0.075				7.4	14.8				60								4th Edition of AP-42, Section 11.2.3, particle size fractions from AP-42, Section 13.2.5 (11/06)
Baghouses																									
AC-BE2-DC	Baghouse AC-BE2-DC (Raw Grinding - AC Area)	1.55	1.55	0.58	lbs/hr	hrs	1	1	0.375						0.04	4,522										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
AC-DC1	Baghouse AC-DC1 (Raw Material Transfer / Weighing)	0.17	0.17	0.063	lbs/hr	hrs	1	1	0.375						0.005	3,889										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
AC-DC3	Baghouse AC-DC3 (Raw Grinding - AC Area)	6.50	6.50	2.87	lbs/hr	hrs	1	1	0.441						0.04	18,952										Based on grain loading rate of 0.040 gr/dscfm, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable particulate information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
AC1-DC1	Baghouse AC1-DC1 (Raw Grinding - AC Area)	6.50	6.50	2.32	lbs/hr	hrs	1	1	0.357						0.04	18,952										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
AC2-DC1	Baghouse AC2-DC1 (Raw Grinding - AC Area)	2.58	2.58	0.92	lbs/hr	hrs	1	1	0.357						0.04	7,535										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
AC3-DC1	Baghouse AC3-DC1 (Raw Grinding - AC Area)	1.53	1.53	0.55	lbs/hr	hrs	1	1	0.357						0.04	4,472										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
AC4-DC1	Baghouse AC4-DC1 (Raw Grinding - AC Area)	1.70	1.70	0.61	lbs/hr	hrs	1	1	0.357						0.04	4,958										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.

Table 8a. Facility Particulate Emission Factors - Excluding Twin Peaks Aggregate Plant and Cotton Field Primary and Overland

Process Code	Process Description	Emission Factors				Production Rate Units	Particulate Matter Emission Factor Inputs [a]																			Reference
		PM	PM_{10}	$PM_{2.5}$	Units		k (PM)	k (PM_{10})	k ($PM_{2.5}$)	U (mph)	M (%)	W (tons)	s (%)	f (%)	Baghouse - Maximum Outlet Grain Loading (gr/dscf)	Baghouse - Air Flow (dscfm)	sL (g/m^2)	P (days/yr)	A (ft^2)	a (PM)	a (PM_{10})	a ($PM_{2.5}$)	b (PM)	b (PM_{10})	b ($PM_{2.5}$)	
BL-DC1	Baghouse BL-DC1 (Bulk Loading)	0.88	0.88	0.33	lbs/hr	hrs	1	1	0.375						0.04	2,560										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
BL-DC2	Baghouse BL-DC2 (Bulk Loading)	0.78	0.78	0.29	lbs/hr	hrs	1	1	0.375						0.04	2,283										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
BL-DC3	Baghouse BL-DC3 (Bulk Loading)	0.96	0.96	0.36	lbs/hr	hrs	1	1	0.375						0.04	2,793										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
BL-DC4	Baghouse BL-DC4 (Bulk Loading)	1.13	1.13	0.42	lbs/hr	hrs	1	1	0.375						0.04	3,281										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
BL-DC5	Baghouse BL-DC5 (Bulk Loading)	1.21	1.21	0.45	lbs/hr	hrs	1	1	0.375						0.04	3,519										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
BL-DC6	Baghouse BL-DC6 (Bulk Loading)	1.26	1.26	0.47	lbs/hr	hrs	1	1	0.375						0.04	3,671										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
BL-DC7	Baghouse BL-DC7 (Bulk Loading)	0.98	0.98	0.37	lbs/hr	hrs	1	1	0.375						0.04	2,849										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
BL-SB5-DC1	Baghouse BL-SB5-DC1 (Bulk Loading)	1.03	1.03	0.39	lbs/hr	hrs	1	1	0.375						0.04	3,000										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
BL-SB5-DC2	Baghouse BL-SB5-DC2 (Bulk Loading)	0.46	0.46	0.17	lbs/hr	hrs	1	1	0.375						0.04	1,342										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
BL-SB5-DC3	Baghouse BL-SB5-DC3 (Bulk Loading)	0.46	0.46	0.17	lbs/hr	hrs	1	1	0.375						0.04	1,342										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
B2-DC1	Baghouse B2-DC1 (Primary Crushing Process Area)	6.49	6.49	2.86	lbs/hr	hrs	1	1	0.441						0.04	18,922										Based on grain loading rate of 0.040 gr/dscfm, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable particulate information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
B2-DC2	Dust Collector B2-DC2 (Screening Plant)	0.17	0.17	0.076	lbs/hr	hours	1	1	0.441						0.005	4,000										Per August,30 ,2023 MPR. Emission rate per manufacturer's grain loading guarantee of 0.005 gr/dscf, and flow rate of 4,000 dscfm. Controls transfer from Drag Conveyor (B2-DR1) to Conveyor (B2-BC2)
B2-DC3	Dust Collector B2-DC3 (Screening Plant)	0.51	0.51	0.23	lbs/hr	hours	1	1	0.441						0.005	12,000										Per August,30 ,2023 MPR. Emission rate per manufacturer's grain loading guarantee of 0.005 gr/dscf, and flow rate of 12,000 dscfm. Controls transfer from Conveyor (B2-BC2) to Screen BS-VS1, Screening, and discharges from Transfer from Screen BS-VS1 to Conveyor (B2-BC3) and Conveyor (B2-BC4)
B3-DC1	Baghouse B3-DC1 (Primary Crushing Process Area)	4.26	4.26	1.88	lbs/hr	hrs	1	1	0.441						0.04	12,434										Based on grain loading rate of 0.040 gr/dscfm, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable particulate information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
B5-DC1	Baghouse B5-DC1 (Primary Crushing Process Area)	0.89	0.89	0.39	lbs/hr	hrs	1	1	0.441						0.04	2,601										Based on grain loading rate of 0.040 gr/dscfm, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable particulate information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
B5-DC2	Baghouse B5-DC2 (Primary Crushing Process Area)	0.39	0.39	0.17	lbs/hr	hrs	1	1	0.441						0.04	1,138										Based on grain loading rate of 0.040 gr/dscfm, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable particulate information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
B5-DC3	Baghouse B5-DC3 (Primary Crushing Process Area)	0.68	0.68	0.30	lbs/hr	hrs	1	1	0.441						0.04	1,976										Based on grain loading rate of 0.040 gr/dscfm, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable particulate information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
B7-DC1	Baghouse B7-DC1 (Rock Reclaim Process Area)	0.50	0.50	0.22	lbs/hr	hrs	1	1	0.441						0.014	4,175										Based on the 40 CFR 60 Subpart OOO emission limitation of 0.014 gr/dscf and an exhaust flowrate of 4,175 dscfm, particle size information from AP-42 Table 11.19.2-2 for a controlled transfer point and control efficiencies from AP-42 Table B.2-3 for fabric filters
B8-DC1	Baghouse B8-DC1 (Rock Reclaim Process Area)	0.65	0.65	0.28	lbs/hr	hrs	1	1	0.441						0.04	1,882										Based on grain loading rate of 0.040 gr/dscfm, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable particulate information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
B8-DC2	Baghouse B8-DC2 (Primary Crushing Process Area)	1.20	1.20	0.53	lbs/hr	hrs	1	1	0.441						0.04	3,500										Based on grain loading rate of 0.040 gr/dscfm, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable particulate information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
B9-DC1	Baghouse B9-DC1 (Primary Crushing Process Area)	1.25	1.25	0.55	lbs/hr	hrs	1	1	0.441						0.04	3,640										Based on grain loading rate of 0.040 gr/dscfm, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable particulate information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
B9-DC2	Baghouse B9-DC2 (Primary Crushing Process Area)	5.94	5.94	2.62	lbs/hr	hrs	1	1	0.441						0.04	17,317										Based on grain loading rate of 0.040 gr/dscfm, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable particulate information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
B9-DC3	Baghouse B9-DC3 (Primary Crushing Process Area)	3.15	3.15	1.39	lbs/hr	hrs	1	1	0.441						0.04	9,200										Based on grain loading rate of 0.040 gr/dscfm, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable particulate information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
B9-DC5	Baghouse B9-DC4 (Primary Crushing Process Area)	0.96	0.96	0.42	lbs/hr	hrs	1	1	0.441						0.04	2,800										Based on grain loading rate of 0.040 gr/dscfm, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable particulate information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
B11-DC1	Baghouse B11-DC1 (Rock Reclaim Process Area)	0.63	0.63	0.28	lbs/hr	hrs	1	1	0.441						0.014	5,250										Based on the 40 CFR 60 Subpart OOO emission limitation of 0.014 gr/dscf and an exhaust flowrate of 4,175 dscfm, particle size information from AP-42 Table 11.19.2-2 for a controlled transfer point and control efficiencies from AP-42 Table B.2-3 for fabric filters
C2-DC1	Baghouse C2-DC1 (Rock Reclaim Process Area)	0.34	0.34	0.15	lbs/hr	hrs	1	1	0.441						0.022	1,795										Based on grain loading rate of 0.040 gr/dscfm, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable particulate information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
C2-DC2	Baghouse C2-DC2 (Rock Reclaim Process Area)	0.12	0.12	0.052	lbs/hr	hrs	1	1	0.441						0.005	2,775										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).

Table 8a. Facility Particulate Emission Factors - Excluding Twin Peaks Aggregate Plant and Cotton Field Primary and Overland

Process Code	Process Description	Emission Factors				Production Rate Units	Particulate Matter Emission Factor Inputs [a]																			Reference
		PM	PM_{10}	$PM_{2.5}$	Units		k (PM)	k (PM_{10})	k ($PM_{2.5}$)	U (mph)	M (%)	W (tons)	s (%)	f (%)	Baghouse - Maximum Outlet Grain Loading (gr/dscf)	Baghouse - Air Flow (dscfm)	sL (g/m^2)	P (days/yr)	A (ft^2)	a (PM)	a (PM_{10})	a ($PM_{2.5}$)	b (PM)	b (PM_{10})	b ($PM_{2.5}$)	
C2-DC3	Baghouse C2-DC3 (Rock Reclaim Process Area)	0.47	0.47	0.21	lbs/hr	hrs	1	1	0.441						0.005	11,067										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
C2-DC4	Baghouse C2-DC4 (Rock Reclaim Process Area)	0.11	0.11	0.048	lbs/hr	hrs	1	1	0.441						0.005	2,550										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
C2-DC5	Baghouse C2-DC5 (Rock Reclaim Process Area)	0.47	0.47	0.21	lbs/hr	hrs	1	1	0.441						0.005	10,862										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
C2-DC6	Baghouse C2-DC6 (Rock Reclaim Process Area)	0.08	0.079	0.035	lbs/hr	hrs	1	1	0.441						0.005	1,833										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
C2-DC7	Baghouse C2-DC7 (Rock Reclaim Process Area)	0.10	0.10	0.045	lbs/hr	hrs	1	1	0.441						0.005	2,400										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
C2-DC8	Baghouse C2-DC8 (Rock Reclaim Process Area)	0.11	0.11	0.048	lbs/hr	hrs	1	1	0.441						0.005	2,550										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
C2-DC9	Baghouse C2-DC9 (Rock Reclaim Process Area)	0.07	0.071	0.031	lbs/hr	hrs	1	1	0.441						0.005	1,660										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
C2-DC10	Baghouse C2-DC10 (Rock Reclaim Process Area)	0.11	0.11	0.049	lbs/hr	hrs	1	1	0.441						0.005	2,575										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
C2-DC11	Baghouse C2-DC11 (Rock Reclaim Process Area)	0.11	0.11	0.050	lbs/hr	hrs	1	1	0.441						0.005	2,625										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
C2-DC12	Baghouse C2-DC12 (Rock Reclaim Belt Conveyor)	0.11	0.11	0.049	lbs/hr	hrs	1	1	0.441						0.005	2,576										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
C2-DC13	Baghouse C2-DC13 (Rock Reclaim Belt Conveyor)	0.12	0.12	0.054	lbs/hr	hrs	1	1	0.441						0.005	2,847										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
CM-DC4	Baghouse CM-DC4 (Finish Grinding - CM Area)	4.31	4.31	1.90	lbs/hr	hrs	1	1	0.441						0.04	12,562										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
CM-DC5	Baghouse CM-DC5 (Finish Grinding - CM Area)	6.62	6.62	2.92	lbs/hr	hrs	1	1	0.441						0.04	19,312										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
CM-DC8	Baghouse CM-DC8 (Finish Grinding - CM Area)	1.28	1.28	0.48	lbs/hr	hrs	1	1	0.375						0.04	3,733										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM-DC9	Baghouse CM-DC9 (Finish Grinding - CM Area)	1.62	1.62	0.61	lbs/hr	hrs	1	1	0.375						0.04	4,730										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM-DC10	Baghouse CM-DC10 (Finish Grinding - CM Area)	1.62	1.62	0.61	lbs/hr	hrs	1	1	0.375						0.04	4,730										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM-DC11	Baghouse CM-DC11 (Finish Grinding - CM Area)	1.12	1.12	0.42	lbs/hr	hrs	1	1	0.375						0.04	3,276										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM-DC12	Baghouse CM-DC12 (Finish Grinding - CM Area)	1.62	1.62	0.61	lbs/hr	hrs	1	1	0.375						0.04	4,730										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM-DC14	Baghouse CM-DC14 (Grinding - CM Area)	1.62	1.62	0.61	lbs/hr	hrs	1	1	0.375						0.04	4,730										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM-DC15	Baghouse CM-DC15 (Grinding - CM Area)	1.62	1.62	0.61	lbs/hr	hrs	1	1	0.375						0.04	4,730										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM-DC16	Baghouse CM-DC16 (Grinding - CM Area)	1.62	1.62	0.61	lbs/hr	hrs	1	1	0.375						0.04	4,730										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM-DC17	Baghouse CM-DC17 (Cement Transfer)	0.17	0.17	0.063	lbs/hr	hrs	1	1	0.375						0.005	3,897										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM-MA-DC1	Baghouse CM-MA-DC1 (MA-DC) (Finish Grinding - CM Area)	0.34	0.34	0.13	lbs/hr	hrs	1	1	0.375						0.04	1,000										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM1-DC1	Baghouse CM1-DC1 (Finish Grinding - CM Area)	2.50	2.50	0.89	lbs/hr	hrs	1	1	0.357						0.04	7,283										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM2-DC1	Baghouse CM2-DC1 (Finish Grinding - CM Area)	3.55	3.55	1.27	lbs/hr	hrs	1	1	0.357						0.04	10,358										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.

Table 8a. Facility Particulate Emission Factors - Excluding Twin Peaks Aggregate Plant and Cotton Field Primary and Overland

Process Code	Process Description	Emission Factors				Production Rate Units	Particulate Matter Emission Factor Inputs [a]																		Reference
		PM	PM_{10}	$PM_{2.5}$	Units		k (PM)	k (PM_{10})	k ($PM_{2.5}$)	U (mph)	M (%)	W (tons)	s (%)	f (%)	Baghouse - Maximum Outlet Grain Loading (gr/dscf)	Baghouse - Air Flow (dscfm)	sL (g/m^2)	P (days/yr)	A (ft^2)	a (PM)	a (PM_{10})	a ($PM_{2.5}$)	b (PM)	b (PM_{10})	b ($PM_{2.5}$)	
CM3-DC1	Baghouse CM3-DC1 (Finish Grinding - CM Area)	6.50	6.50	2.32	lbs/hr	hrs	1	1	0.357						0.04	18,952										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM4-DC1	Baghouse CM4-DC1 (Finish Grinding - CM Area)	1.26	1.26	0.45	lbs/hr	hrs	1	1	0.357						0.04	3,681										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM5-DC1	Baghouse CM5-DC1 (Finish Grinding - CM Area)	6.50	6.50	2.32	lbs/hr	hrs	1	1	0.357						0.04	18,952										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM6-DC1	Baghouse CM6-DC1 (Finish Grinding - CM Area)	6.50	6.50	2.32	lbs/hr	hrs	1	1	0.357						0.04	18,952										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM7-DC1	Baghouse CM7-DC1 (Finish Grinding - CM Area)	3.67	3.67	1.38	lbs/hr	hrs	1	1	0.375						0.04	10,710										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
CM7-DC2	Baghouse CM7-DC2 (Finish Grinding - CM Area)	2.15	2.15	0.95	lbs/hr	hrs	1	1	0.441						0.04	6,273										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
CM7-DC3	Baghouse CM7-DC3 (Finish Grinding - CM Area)	12.04	12.04	4.30	lbs/hr	hrs	1	1	0.357						0.04	35,107										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
D2-DC1	Baghouse D2-DC1 (Raw Grinding - Secondary Crushing)	0.89	0.89	0.39	lbs/hr	hrs	1	1	0.441						0.005	20,757										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
D2-DC3	Baghouse D2-DC1 (Raw Grinding - Secondary Crushing)	0.04	0.038	0.017	lbs/hr	hrs	1	1	0.441						0.005	876										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
D2-DC4	Baghouse D2-DC4 (Cement Transfer)	0.07	0.065	0.024	lbs/hr	hrs	1	1	0.375						0.005	1,517										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
D2-DC5	Baghouse D2-DC5 (Raw Grinding - Secondary Crushing)	0.06	0.061	0.027	lbs/hr	hrs	1	1	0.441						0.005	1,433										Based on grain loading rate of 0.005 gr/dscf (**From Minor Permit Revision 53305, issued April 7, 2011**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
D2-DC6	Baghouse D2-DC6 (Raw Grinding - Secondary Crushing)	0.06	0.061	0.027	lbs/hr	hrs	1	1	0.441						0.005	1,433										Based on grain loading rate of 0.005 gr/dscf (**From Minor Permit Revision 53305, issued April 7, 2011**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
D2-DC7	Baghouse D2-DC7 (Raw Grinding - Secondary Crushing)	0.06	0.061	0.027	lbs/hr	hrs	1	1	0.441						0.005	1,433										Based on grain loading rate of 0.005 gr/dscf (**From Minor Permit Revision 53305, issued April 7, 2011**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
D2-PC	Baghouse D2-PC (D2 Mill Product Collector)	4.80	4.80	1.71	lbs/hr	hrs	1	1	0.357						0.004	140,000										Based on grain loading rate of 0.004 gr/dscf (from **Minor Permit Revision 1001256**), and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
D2-1-DC1	Baghouse D2-1-DC1 (Finish Grinding - D2 Mill)	0.50	0.50	0.18	lbs/hr	hrs	1	1	0.357						0.005	11,726										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
D3-1-DC1	Baghouse D3-1-DC1 (Grinding - D3 Mill)	5.61	5.61	2.00	lbs/hr	hrs	1	1	0.357						0.04	16,371										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
D3-1-DC2	Baghouse D3-1-DC2 (Grinding - D3 Mill)	40.32	40.32	15.12	lbs/hr	hrs	1	1	0.375						0.04	117,601										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
D3-1-DC3	Baghouse D3-1-DC3 (Grinding - D3 Mill)	4.04	4.04	1.78	lbs/hr	hrs	1	1	0.441						0.04	11,777										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
D4-DC1	Baghouse D4-DC1 (Raw Material Transfer)	0.22	0.22	0.096	lbs/hr	hrs	1	1	0.441						0.005	5,091										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
D4-DC2	Baghouse D4-DC2 (Raw Material Transfer)	0.37	0.37	0.16	lbs/hr	hrs	1	1	0.441						0.005	8,693										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
F2-DC1	Baghouse F2-DC1 (Homogenizing Silo - Kiln 4)	0.41	0.41	0.15	lbs/hr	hrs	1	1	0.375						0.005	9,600										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
F2-DC4	Baghouse F2-DC4 (Raw Material Transfer / Weighing)	0.03	0.031	0.012	lbs/hr	hrs	1	1	0.375						0.005	718										Based on grain loading rate of 0.005 gr/dscf (**From Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
F2-PS-DC1	Baghouse F2-PS-DC1 (Feed - Kilns 1-3)	0.82	0.82	0.31	lbs/hr	hrs	1	1	0.375						0.04	2,403										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
F2-PS-DC2	Baghouse F2-PS-DC2 (Proportional Feed - Kilns 1-3)	0.30	0.30	0.11	lbs/hr	hrs	1	1	0.375						0.04	880										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
F2-PS-DC3	Baghouse F2-PS-DC3 (Proportional Feed - Kiln 1)	0.48	0.48	0.18	lbs/hr	hrs	1	1	0.375						0.04	1,400										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
F2-SB2-DC	Baghouse F2-SB2-DC (Proportional Feed - Kiln 1)	0.93	0.93	0.35	lbs/hr	hrs	1	1	0.375						0.04	2,700										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
F3-DC1	Baghouse F3-DC1 (Feed - Kiln 4)	0.51	0.51	0.19	lbs/hr	hrs	1	1	0.375						0.04	1,493										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.

Table 8a. Facility Particulate Emission Factors - Excluding Twin Peaks Aggregate Plant and Cotton Field Primary and Overland

Process Code	Process Description	Emission Factors				Production Rate Units	Particulate Matter Emission Factor Inputs [a]																		Reference
		PM	PM_{10}	$PM_{2.5}$	Units		k (PM)	k (PM_{10})	k ($PM_{2.5}$)	U (mph)	M (%)	W (tons)	s (%)	f (%)	Baghouse - Maximum Outlet Grain Loading (gr/dscf)	Baghouse - Air Flow (dscfm)	sL (g/m^2)	P (days/yr)	A (ft^2)	a (PM)	a (PM_{10})	a ($PM_{2.5}$)	b (PM)	b (PM_{10})	b ($PM_{2.5}$)	
F3-DC2	Baghouse F3-DC2 (Feed - Kiln 4)	0.57	0.57	0.21	lbs/hr	hrs	1	1	0.375						0.04	1,653										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
F3-KS-DC1	Baghouse F3-KS-DC1 (Proportional Feed - Kilns 1-3)	0.26	0.26	0.097	lbs/hr	hrs	1	1	0.375						0.04	751										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
H2-DC1	Baghouse H2-DC1 (Conveyors - Kiln 4)	0.31	0.31	0.13	lbs/hr	hrs	1	1	0.441						0.01	3,559										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
H2-DC2	Baghouse H2-DC2 (Clinker Storage)	0.46	0.46	0.20	lbs/hr	hrs	1	1	0.441						0.01	5,338										Lb/hour rate from **Minor Permit Revision 1001256**. Information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
H2-DC3	Baghouse H2-DC3 (Kiln 4 Clinker Bypass)	0.0470	0.05	0.02	lbs/hr	hrs	1	1	0.441						0.04	N/A										This unit only operates during upset conditions, therefore permitted operation limit used for hours of operation and permit emission limits used for emission rates.
H2-GB	Baghouse H2-GB (Clinker Cooler - Kiln 4)	34.16	34.16	15.06	lbs/hr	hrs	1	1	0.441						--	N/A										Based on Kiln Feed rate of 1.65 tons feed/ton clinker produced and emission factor of 0.10 lb/ton of kiln feed. Information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
H2-KB1-DC	Baghouse H2-KB1-DC (Dust Conveyor - Kilns 1-3)	1.59	1.59	0.70	lbs/hr	hrs	1	1	0.441						0.04	4,651										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
H2-KB3-DC	Baghouse H2-KB3-DC (Kilns 2, 3, 4 Clinker Transfer)	1.03	1.03	0.45	lbs/hr	hrs	1	1	0.441						0.04	3,000										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
H2-1-DC	Baghouse H2-1-DC (Clinker Cooler - Kiln 1)	3.00	3.00	1.32	lbs/hr	hrs	1	1	0.441						--	N/A										Based on Kiln Feed rate of 1.58 tons feed/ton clinker produced and emission factor of 0.10 lb/ton of kiln feed. Information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
H2-2-DC	Baghouse H2-2-DC (Clinker Cooler - Kiln 2)	3.00	3.00	1.32	lbs/hr	hrs	1	1	0.441						--	N/A										Based on Kiln Feed rate of 1.58 tons feed/ton clinker produced and emission factor of 0.10 lb/ton of kiln feed. Information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
H2-3-DC	Baghouse H2-3-DC (Clinker Cooler - Kiln 3)	3.00	3.00	1.32	lbs/hr	hrs	1	1	0.441						--	N/A										Based on Kiln Feed rate of 1.58 tons feed/ton clinker produced and emission factor of 0.10 lb/ton of kiln feed. Information from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04). Assumed baghouse control efficiency of 99% for $PM_{2.5}$ and generalized particle size distributions from AP-42, Table B.2-3 (9/90).
H3-K4-DC1,2	Baghouse H3-K4-DC1,2 (Coal Analysis - Kiln 4)	6.96	6.96	2.48	lbs/hr	hrs	1	1	0.357						0.04	20,300										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size fraction information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
H4-DC1	Baghouse H4-DC1 (Preheater - Kiln 4)	0.60	0.60	0.23	lbs/hr	hrs	1	1	0.375						0.04	1,750										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
H4-K1-DC	Baghouse H4-K1-DC (Feed - Kiln 1)	0.14	0.14	0.051	lbs/hr	hrs	1	1	0.375						0.04	400										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
H4-K2-DC	Baghouse H4-K2-DC (Feed - Kiln 2)	0.13	0.13	0.048	lbs/hr	hrs	1	1	0.375						0.04	375										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
H4-K3-DC	Baghouse H4-K3-DC (Feed - Kiln 3)	0.48	0.48	0.18	lbs/hr	hrs	1	1	0.375						0.04	1,400										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
H5-DC1	Baghouse H5-DC1, or H5-K4-DC1 (Preheater - Kiln 4)	0.44	0.44	0.17	lbs/hr	hrs	1	1	0.375						0.04	1,289										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
H5-GB	Baghouse H5-GB (Kiln 4 Stack)	13.00	13.00	9.31	lbs/hr	hrs	1	1	0.716						0.008	189,549										Based on grain loading rate of 0.008 gr/dscf (From **Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from April 13, 2004 Source Test.
H5-5-DC1	Baghouse H5-5-DC1 (Kiln Dust)	0.64	0.64	0.24	lbs/hr	hrs	1	1	0.375						0.04	1,863										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
H5-5-DC2	Baghouse H5-5-DC2 (Dust Bin)	0.64	0.64	0.24	lbs/hr	hrs	1	1	0.375						0.04	1,860										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
H5-5-GB	Baghouse H5-5-GB (Kilns 1-3 Stack)	9.85	9.85	8.77	lbs/hr	hrs	1	1	0.89						0.008	143,662										Based on grain loading rate of 0.008 gr/dscf (From **Significant Permit Revision 53230, issued January 11, 2011; Consent Decree**), and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from April 13, 2004 Source Test.
PH-DC1	Baghouse PH-DC1 (Cement Packhouse)	1.62	1.62	0.61	lbs/hr	hrs	1	1	0.375						0.04	4,730										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
PH-DC2	Baghouse PH-DC2 (Cement Packhouse)	1.73	1.73	0.65	lbs/hr	hrs	1	1	0.375						0.04	5,038										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
PH-DC3	Baghouse PH-DC3 (Cement Packhouse)	1.17	1.17	0.44	lbs/hr	hrs	1	1	0.375						0.04	3,416										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
PH-DC4	Baghouse PH-DC4 (Cement Packhouse)	0.80	0.80	0.30	lbs/hr	hrs	1	1	0.375						0.04	2,344										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
PH-DC5	Baghouse PH-DC5 (Cement Packhouse)	2.16	2.16	0.81	lbs/hr	hrs	1	1	0.375						0.04	6,300										Based on grain loading rate of 0.040 gr/dscf, and given baghouse flowrate at 8,760 hours of operation. Particle size and filterable/condensable information from AP-42, Section 11.19.2, Table 11.19.2-4 (8/04) for pulverized mineral storage with fabric filter control.
ALT-DC1	Alternate Fuel Handling System Baghouse 1	0.20	0.19	0.17	lbs/hr	hrs	1	0.92	0.89						0.005	4,768										Input parameters for the Alternate Fuel Handling System Baghouses per the February 2025 Minor Permit Revision submitted by CalPortland to ADEQ. PM Speciation based on the average of CARB Profiles 361 (Wood operation - sanding).
ALT-DC2	Alternate Fuel Handling System Baghouse 2	0.20	0.19	0.17	lbs/hr	hrs	1	0.92	0.89						0.005	4,768										Input parameters for the Alternate Fuel Handling System Baghouses per the February 2025 Minor Permit Revision submitted by CalPortland to ADEQ. PM Speciation based on the average of CARB Profiles 361 (Wood operation - sanding).
ALT-DC3	Alternate Fuel Handling System Baghouse 3	0.20	0.19	0.17	lbs/hr	hrs	1	0.92	0.89						0.005	4,768										Input parameters for the Alternate Fuel Handling System Baghouses per the February 2025 Minor Permit Revision submitted by CalPortland to ADEQ. PM Speciation based on the average of CARB Profiles 361 (Wood operation - sanding).
ALT-DC4	Alternate Fuel Handling System Baghouse 4	0.20	0.19	0.17	lbs/hr	hrs	1	0.92	0.89						0.005	4,768										Input parameters for the Alternate Fuel Handling System Baghouses per the February 2025 Minor Permit Revision submitted by CalPortland to ADEQ. PM Speciation based on the average of CARB Profiles 361 (Wood operation - sanding).
ALT-DC5	Alternate Fuel Handling System Baghouse 5	0.20	0.19	0.17	lbs/hr	hrs	1	0.92	0.89						0.005	4,768										Input parameters for the Alternate Fuel Handling System Baghouses per the February 2025 Minor Permit Revision submitted by CalPortland to ADEQ. PM Speciation based on the average of CARB Profiles 361 (Wood operation - sanding).

Table 8a. Facility Particulate Emission Factors - Excluding Twin Peaks Aggregate Plant and Cotton Field Primary and Overland

Process Code	Process Description	Emission Factors				Production Rate Units	Particulate Matter Emission Factor Inputs [a]																		Reference
		PM	PM_{10}	$PM_{2.5}$	Units		k (PM)	k (PM_{10})	k ($PM_{2.5}$)	U (mph)	M (%)	W (tons)	s (%)	f (%)	Baghouse - Maximum Outlet Grain Loading (gr/dscf)	Baghouse - Air Flow (dscfm)	sL (g/m^2)	P (days/yr)	A (ft^2)	a (PM)	a (PM_{10})	a ($PM_{2.5}$)	b (PM)	b (PM_{10})	b ($PM_{2.5}$)	
B2-DC4	Dust Collector B2-DC4	0.20	0.20	0.09	lbs/hr	hrs	1	1.00	0.441						0.008	2,861										Input parameters for the Alternate Fuel Handling System Baghouses per the February 2025 Minor Permit Revision submitted by CalPortland to ADEQ. $PM_{2.5}$ Fraction provided in the Facility's PTE workbooks provided by ADEQ on 8/21/2024 for Baghouse B2-DC2
H2-DC4	Dust Collector H2-DC4	0.13	0.12	0.05	lbs/hr	hrs	1	0.92	0.441						0.01	1,569										Input parameters for the Alternate Fuel Handling System Baghouses per the February 2025 Minor Permit Revision submitted by CalPortland to ADEQ. PM speciation profiles provided in CARB Profile 343. Applicable $PM_{2.5}$ fraction provided in the Facility's PTE workbooks provided by ADEQ on 8/21/2024.
Unpaved Vehicle Travel Emissions - Quarry and Cement Plant																									
IMP-UP-1	Import/Export Truck- Iron Source to Plant Stockpile - Truck	7.15	1.93	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMP-UP-2	Haul Truck- Iron Source to Plant Stockpile - Rail	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMP-UP-3	Haul Truck- Bauxite / Alumina Source to Plant Stockpile - Rail	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMP-UP-4	Import/Export Truck- Gypsum - Import to Stockpile - Truck	7.15	1.93	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMP-UP-5	Import/Export Truck- Mineral Filler - Flyash to Plant Bins - Truck	7.15	1.93	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMP-UP-6	Import/Export Truck- Mineral Filler - Hydrated Lime to Plant Bins - Truck	7.15	1.93	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMP-UP-7	Haul Truck- Coal to Plant Stockpile - Rail	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMP-UP-8	Haul Truck- Coke / Pet Coke to Plant - Rail	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMP-UP-9	Import/Export Truck- Grinding Aid	7.15	1.93	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMP-UP-10	Import/Export Truck- Grinding Aid	7.15	1.93	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMP-UP-11	Import/Export Truck- REAX	7.15	1.93	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMP-UP-12	Import/Export Truck- Tire/Rubber Chips	7.15	1.93	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMP-UP-13	Import/Export Truck- Wood Chips/Pecan Shells	7.15	1.93	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMQ-UP-1	Haul Truck- Iron from Quarry Stockpile to Plant - Truck	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMQ-UP-2	Haul Truck- Bauxite / Alumina from Quarry Stockpile to Plant - Truck	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMQ-UP-3	Import/Export Truck- Imported High-Grade Limestone to Quarry - Truck	7.15	1.93	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
IMQ-UP-4	Haul Truck- 1" H.G. Limestone from Quarry to Plant - Truck	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-1	Haul Truck- Low-Grade Limestone to Stockpile	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-2	Front-End Loader- Low-Grade Limestone to D4 Hopper	12.07	3.26	0.33	lbs/VMT	VMT	4.9	1.5	0.15			88.2	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-3	Haul Truck- Quarry H.G. Limestone from S/R Bldg. to D4 Stockpile	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-4	Front-End Loader- Quarry H.G. Limestone from Stockpile to D4 Hopper	12.07	3.26	0.33	lbs/VMT	VMT	4.9	1.5	0.15			88.2	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-5	Import/Export Truck- Imported H.G. Limestone from Source to D3 Stockpile	7.15	1.93	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-6	Front-End Loader- Imported H.G. Limestone from Stockpile to D3 Working Stockpile	12.07	3.26	0.33	lbs/VMT	VMT	4.9	1.5	0.15			88.2	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-7	Front-End Loader- Imported H.G. Limestone from D3 Working Stockpile to D3 Hopper	8.15	2.20	0.22	lbs/VMT	VMT	4.9	1.5	0.15			36.8	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-8	Import/Export Truck- Imported H.G. Limestone from Source to Crusher 1 Stockpile	7.15	1.93	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-9	Front-End Loader- Imported H.G. Limestone from Stockpile to Crusher 1	12.07	3.26	0.33	lbs/VMT	VMT	4.9	1.5	0.15			88.2	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-10	Front-End Loader- Bauxite / Alumina at Plant (wet conditions)	11.99	3.24	0.32	lbs/VMT	VMT	4.9	1.5	0.15			86.8	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-11	Front-End Loader- Bauxite / Alumina at Plant (wet conditions)	11.99	3.24	0.32	lbs/VMT	VMT	4.9	1.5	0.15			86.8	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-12	Front-End Loader- Bauxite / Alumina at Plant (dry)	11.99	3.24	0.32	lbs/VMT	VMT	4.9	1.5	0.15			86.8	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-13	Front-End Loader- Iron Source at Plant	12.33	3.33	0.33	lbs/VMT	VMT	4.9	1.5	0.15			92.4	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-14	Front-End Loader- Gypsum to Crusher 1 Hopper	12.07	3.26	0.33	lbs/VMT	VMT	4.9	1.5	0.15			88.2	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-15	Haul Truck- Coal Mill Rejects	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-16	Coal/Coke Reclaim Loader- Coal Reclaim (Percentage of Coal Processed)	11.97	3.23	0.32	lbs/VMT	VMT	4.9	1.5	0.15			86.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-17	Coal/Coke Reclaim Loader- Coke Reclaim	7.19	1.94	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.9	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-18	Haul Truck- Horseshoe to Inert Material Storage	13.39	3.61	0.36	lbs/VMT	VMT	4.9	1.5	0.15			111.0	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-19	Dump Truck (Horseshoe)- Plant to Horseshoe	5.44	1.47	0.15	lbs/VMT	VMT	4.9	1.5	0.15			15.0	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-20	Front-End Loader- D4 Material Bypass	11.94	3.22	0.32	lbs/VMT	VMT	4.9	1.5	0.15			86.0	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-21	Forklift Dump- C2 Metal Rejects	3.86	1.04	0.10	lbs/VMT	VMT	4.9	1.5	0.15			7.0	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-22	Front-End Loader- Clinker to Stockpile	12.18	3.29	0.33	lbs/VMT	VMT	4.9	1.5	0.15			90.0	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-23	Front-End Loader- Clinker to Reclaim	12.18	3.29	0.33	lbs/VMT	VMT	4.9	1.5	0.15			90.0	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-24	Dump Truck- Clinker Conveyor Bypass	5.44	1.47	0.15	lbs/VMT	VMT	4.9	1.5	0.15			15.0	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-25	Haul Truck- Clinker from Plant to Quarry Crusher	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-26	Haul Truck- Kiln Brick	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-27	Import/Export Truck- Pantano Clay (Alumina) to Quarry	7.15	1.93	0.19	lbs/VMT	VMT	4.9	1.5	0.15			27.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMP-UP-28	Haul Truck- Pantano Clay (Alumina) at Quarry	13.39	3.61	0.36	lbs/VMT	VMT	4.9	1.5	0.15			111.0	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMQ-UP-1	Haul Truck- Waste Rock/Overburden to 111 (Aggregate Dump)	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMQ-UP-2	Haul Truck- Waste Rock/Overburden to 112 (Lower/Upper Ashton Dump)	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMQ-UP-3	Haul Truck- Waste Rock/Overburden to 119 (South Crusher Dump)	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMQ-UP-4	Haul Truck- Waste Rock/Overburden to 108 (North Crusher Dump)	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMQ-UP-5	Haul Truck- Rock Processed at Quarry	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMQ-UP-6	Haul Truck- Low-Grade Limestone at Quarry	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMQ-UP-7	Haul Truck- Quarry H.G. Limestone to Quarry Crusher	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMQ-UP-8	Haul Truck- Imported H.G. Limestone to Quarry Crusher	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMQ-UP-9	Haul Truck- Bauxite / Alumina at Quarry	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMQ-UP-10	Haul Truck- Magnetite (Iron) Stockpile to Face	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMQ-UP-11	Haul Truck- Magnetite (Iron) Face to Crusher	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMQ-UP-12	Haul Truck- AB, 3/8+ Twin Peaks to Plant	13.53	3.65	0.37	lbs/VMT	VMT	4.9	1.5	0.15			113.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
PMQ-UP-13	Fines Screening Process Loader Travel at the Quarry Crusher System	14.25	3.85	0.38	lbs/VMT	VMT	4.9	1.5	0.15			127.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
NM-UP-1	Heavy Duty Truck- Blasting materials	5.44	1.47	0.15	lbs/VMT	VMT	4.9	1.5	0.15			15.0	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
NM-UP-2	Light Duty Truck- Blasting materials	2.83	0.76	0.08	lbs/VMT	VMT	4.9	1.5	0.15			3.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
NM-UP-3	Water truck (small)- Small Water Trucks	8.51	2.30	0.23	lbs/VMT	VMT	4.9	1.5	0.15			40.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
NM-UP-4	Water truck (large)- Large Water Trucks	12.09	3.26	0.33	lbs/VMT	VMT	4.9	1.5	0.15			88.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
NM-UP-5	Light duty autos/pick-up trucks at Plant- N/A	12.09	3.26	0.33	lbs/VMT	VMT	4.9	1.5	0.15			88.5	6.4					60		0.7	0.9	0.9	0.45	0.45	0.45	
Paved Vehicle Travel Emissions - Quarry and Cement Plant																									
IM-PV-1	Import/Export Truck- Iron Source to Plant Stockpile - Truck	1.92	0.38	0.09	lbs/VMT	VMT	0.011	0.0022	0.00054			27.5					7.4	60								
IM-PV-2	Import/Export Truck- Gypsum - Import to Stockpile - Truck	1.92	0.38	0.09	lbs/VMT	VMT	0.011	0.0022	0.00054			27.5					7.4	60								
IM-PV-3	Import/Export Truck- Mineral Filler - Flyash to Plant Bins - Truck	1.92	0.38	0.09	lbs/VMT	VMT	0.011	0.0022	0.00054			27.5					7.4	60								
IM-PV-4	Import/Export Truck- Mineral Filler - Hydrated Lime to Plant Bins - Truck	1.92	0.38	0.09	lbs/VMT	VMT	0.011	0.0022	0.00054			27.5					7.4	60								
IM-PV-5	Import/Export Truck- Grinding Aid 1	1.92	0.38	0.09	lbs/VMT	VMT	0.011	0.0022	0.00054			27.5					7.4	60								
IM-PV-6	Import/Export Truck- Grinding Aid 2	1.92	0.38	0.09	lbs/VMT	VMT	0.011	0.0022	0.00054			27.5					7.4	60								
IM-PV-7	Import/Export Truck- REAX	1.92	0.38	0.09	lbs/VMT	VMT	0.011	0.0022	0.00054			27.5					7.4	60								
IM-PV-8	Import/Export Truck- Tire/Rubber Chips	1.92	0.38	0.09	lbs/VMT	VMT	0.011	0.0022	0.00054			27.5					7.4	60								
IM-PV-9	Front-End Loader- Tire/Rubber Chips	5.87	1.17	0.29	lbs/VMT	VMT	0.011	0.0022	0.00054			82.5					7.4	60								
IM-PV-10	Import/Export Truck- Wood Chips/Pecan Shells	1.92	0.38	0.09	lbs/VMT	VMT	0.011	0.0022	0.00054			27.5					7.4	60								
IM-PV-11	Front-End Loader- Wood Chips/Pecan Shells	5.96	1.19	0.29	lbs/VMT	VMT	0.011	0.0022	0.00054			83.7					7.4	60								
IM-PV-12	Import/Export Truck- Used Oil	1.92	0.38	0.09	lbs/VMT	VMT	0.011	0.0022	0.00054			27.5					7.4	60								
IMQ-PV-1	Haul Truck- Iron from Quarry Stockpile to Plant - Truck	8.13	1.63	0.40	lbs/VMT	VMT	0.011	0.0022	0.00054			113.5					7.4	60								
IMQ-PV-2	Haul Truck- Bauxite / Alumina from Quarry Stockpile to Plant - Truck	8.13	1.63	0.40	lbs/VMT	VMT	0.011	0.0022	0.00054			113.5					7.4	60								
IMQ-PV-3	Import/Export Truck- Imported High-Grade Limestone to Quarry - Truck	1.92	0.38	0.09	lbs/VMT	VMT	0.011	0.0022	0.00054			27.5					7.4	60								

Table 8a. Facility Particulate Emission Factors - Excluding Twin Peaks Aggregate Plant and Cotton Field Primary and Overland

Process Code	Process Description	Emission Factors				Production Rate Units	Particulate Matter Emission Factor Inputs [a]																			Reference
		PM	PM_{10}	$PM_{2.5}$	Units		k (PM)	k (PM_{10})	k ($PM_{2.5}$)	U (mph)	M (%)	W (tons)	s (%)	f (%)	Baghouse - Maximum Outlet Grain Loading (gr/dscf)	Baghouse - Air Flow (dscfm)	sL (g/m^2)	P (days/yr)	A (ft^2)	a (PM)	a (PM_{10})	a ($PM_{2.5}$)	b (PM)	b (PM_{10})	b ($PM_{2.5}$)	
IMQ-PV-4	Haul Truck- 1" H.G. Limestone from Quarry to Plant - Truck	8.13	1.63	0.40	lbs/VMT	VMT	0.011	0.0022	0.00054			113.5					7.4	60								
PMP-PV-1	Haul Truck- Coal Mill Rejects	8.13	1.63	0.40	lbs/VMT	VMT	0.011	0.0022	0.00054			113.5					7.4	60								
PMP-PV-2	Haul Truck- Horseshoe to Inert Material Storage	7.95	1.59	0.39	lbs/VMT	VMT	0.011	0.0022	0.00054			111.0					7.4	60								
PMP-PV-3	Dump Truck (Horseshoe)- Plant to Horseshoe	1.03	0.21	0.05	lbs/VMT	VMT	0.011	0.0022	0.00054			15.0					7.4	60								
PMP-PV-4	Forklift Dump- C2 Metal Rejects	0.47	0.09	0.02	lbs/VMT	VMT	0.011	0.0022	0.00054			7.0					7.4	60								
PMP-PV-5	Dump Truck- Clinker Conveyor Bypass	1.03	0.21	0.05	lbs/VMT	VMT	0.011	0.0022	0.00054			15.0					7.4	60								
PMP-PV-6	Haul Truck- Clinker from Plant to Quarry Crusher	8.13	1.63	0.40	lbs/VMT	VMT	0.011	0.0022	0.00054			113.5					7.4	60								
PMP-PV-7	Front-End Loader- Kiln Brick	2.49	0.50	0.12	lbs/VMT	VMT	0.011	0.0022	0.00054			35.5					7.4	60								
PMP-PV-8	Haul Truck- Kiln Brick	8.13	1.63	0.40	lbs/VMT	VMT	0.011	0.0022	0.00054			113.5					7.4	60								
PMP-PV-9	Import/Export Truck- Pantano Clay (Alumina) to Quarry	1.92	0.38	0.09	lbs/VMT	VMT	0.011	0.0022	0.00054			27.5					7.4	60								
PMP-PV-10	Cement Export Truck- Cement Exports - Bulk Truck	1.84	0.37	0.09	lbs/VMT	VMT	0.011	0.0022	0.00054			26.5					7.4	60								
PMQ-PV-1	AB, 3/8+ Twin Peaks to Plant	8.13	1.63	0.40	lbs/VMT	VMT	0.011	0.0022	0.00054			113.5					7.4	60								
Coal Crushing																										
CoalCrush	Coal Crushing with Cyclone	0.11	0.055	0.0083	lbs/ton	tons	1	0.50	0.075																	AP-42, Section 12.2, Table 12.2-18 (05/08) - Coal crushing with cyclone; particle size fractions estimated from AP-42, Section 13.2.5 (11/06).
Fuel Burning Equipment																										
DieselGen	Diesel Fuel Engine Driven Generator	0.0022	0.0022	0.0022	lbs/hp-hr	hp-hrs	1	1	1																	Emission Factors obtained from AP-42 Table 3.3-1 for diesel-fired engines <600 hp. The PM_{10} emission factor was applied for PM and $PM_{2.5}$ as all particulate matter is assumed to be ≤1um in size.
NatGas	Natural Gas Combustion (< 10 MMBtu/hr)	7.60	7.60	7.60	lbs/MMscf	MMscf	1	1	1																	AP-42, Section 1.4, Table 1.4-2 (07/98). All particulate matter emission factors are primary (include both the filterable and condensable portions).
NGGen	Natural Gas Engine Driven Generator	0.00020	0.00020	0.00020	lbs/hp-hr	hp-hrs	1	1	1																	AP-42, Section 3.2, Table 3.2-3 for 4-Stroke Rich Burn Engines (07/00). A brake-specific fuel consumption of 10,500 Btu/hp-hr was assumed.
AGG-Gen	Tier 4 Diesel Engine (kW > 560)	0.00005	0.00005	0.00005	lb/hp-hr	hp-hr	1	1	1																	Tier 4 Emission Standards from 40 CFR 1039 Table 1 for Engines Rated > 560 kW, Assume $PM=PM_{10}=PM_{2.5}$

[a] k = particle size multiplier, U = wind speed, M = material moisture content, W = mean vehicle weight, s = surface material silt content, sL = road surface silt loading, P = number of days per year with at least 0.01 inches of precipitation, a = constant based on particle size, b = constant based on particle size

Table 9a. Facility Particulate Control Methods and Effiencies Factors for Existing Emission Sources

Control Code	Control Description	Pick-Up / Control Efficiency (%) [1]			Internal Notes
		PM	PM_{10}	$PM_{2.5}$	
Baghouse	Baghouse Control	99%			AP-42 Table B.2-3 for fabric filters (09/90).
Enclosed	Enclosed Process	100%			Assumed
H7-LJ-SB1-DC	Lime Bin Vent H7-LJ-SB1-DC	99%			Minimum Value from AP-42 Table B.2-3 for Fabric Filters (09/90)
Inside	Emissions are Exhausted Inside a Building Under Positive Pressure	50%			ADEQ Recommendation
None	No Pollution Controls	0%			Assumed
ResWater	Water Carryover from Upstream Water Sprays	90%			Minimum Value from AP-42 Table B.2-3 (09/90).
Sealed	Sealed Process	100%			Assumed
Unpaved	Unpaved Road Controls - Excluding Twin Peaks Aggregate Plant and Cotton Field Primary and Overland	65%			Assumed - from the facility's dust control plan. Control measures from unpaved roads include speed restrictions, regular watering, and application of dust suppressants.
Water	Unpaved Road Controls - Excluding Twin Peaks Aggregate Plant and Cotton Field Primary and Overland	25%			Assumed - From *Surface Treatment of the Control of Open Fugitive Dust Sources, PB89-10369, Section 3.3.3*
WindBreak	Stockpile Windbreak	70%			Stockpile windbreak effectiveness - assumed from information in *US EPA publication, Control of Open Fugitive Dust Sources (EPA-450/3-88-008, September 1988.*
WSpray	Water Spray at Unprotected Transfer Points	90%			AP-42, Section 11.19.1, Page 11.19.1-5 (11/95)
3Sided	3-Sided Enclosure	75%			South Coast Air Quality Management District Document on Fugitive Dust Mitigation Measures
BOP	Best Operating Practices	0%			Assumed

[1] Values consistent with the most recent air quality permit renewal application approved by Class I Permit No. 85424 on March 3, 2021.

Table 10a. Facility Annual Particulate Matter Emissions - PTE Calculations

Unit Description	Process Code	Non-Fug. (NF) / Fug. (F)	Rate	Rate Units	Emission Factors			EF Units	Control Code	Pick-Up / Control Efficiency			PM Emissions (tpy)	PM_{10} Emissions (tpy)	$PM_{2.5}$ Emissions (tpy)
					PM	PM_{10}	$PM_{2.5}$			PM	PM_{10}	$PM_{2.5}$			
Mining Operations															
Drilling	Drilling	F	10,049	holes	1.30	0.58	0.11	lbs/hole	None	0%			6.53	2.90	0.54
Blasting	Blasting	F	130	blasts	112	58.24	3.36	lbs/blast	None	0%			7.28	3.79	0.22
Material Transfer Operations															
Iron Material (Truck) - Truck to Stockpile Transfer	Iron	F	121,307	tons	0.014	0.0065	0.00098	lbs/ton	None	0%			0.83	0.39	0.06
Iron Material (Rail) - Railcar to Crusher Transfer	Iron	NF	142,307	tons	0.014	0.0065	0.00098	lbs/ton	None	0%			0.97	0.46	0.07
Iron Material (Rail) - Crusher to Truck Transfer	Iron	F	142,307	tons	0.014	0.0065	0.00098	lbs/ton	None	0%			0.97	0.46	0.07
Iron Material (Rail)- Truck to Stockpile Transfer	Iron	F	142,307	tons	0.014	0.0065	0.00098	lbs/ton	None	0%			0.97	0.46	0.07
Iron Material (To Quarry from Plant) - Loader to Truck Transfer	Iron	F	5,439	tons	0.014	0.0065	0.00098	lbs/ton	None	0%			0.04	0.02	0.003
Iron Material (To Quarry from Plant) - Truck to Quarry Stockpile Transfer	Iron	F	5,439	tons	0.014	0.0065	0.00098	lbs/ton	None	0%			0.04	0.02	0.003
Mineral Filler Flyash (Truck) - Truck to Plant Bin	MinFly	NF	11,794	tons	0.0089	0.0049	0.00064	lbs/ton	None	0%			0.05	0.03	0.004
Mineral Filler Hydrated Lime (Truck) - Truck to Plant Bin	MinLime	NF	6,000	tons	0.0089	0.0049	0.00064	lbs/ton	None	0%			0.03	0.01	0.002
Alumina Material (Rail) - Railcar to Crusher Transfer	Alumina	NF	155,640	tons	0.00054	0.00026	0.000039	lbs/ton	None	0%			0.04	0.02	0.003
Alumina Material (Rail) - Crusher to Truck Transfer	Alumina	NF	155,640	tons	0.00054	0.00026	0.000039	lbs/ton	None	0%			0.04	0.02	0.003
Alumina Material (Rail) - Truck to Stockpile Transfer	Alumina	F	155,640	tons	0.00054	0.00026	0.000039	lbs/ton	None	0%			0.04	0.02	0.003
Alumina Material (To Quarry from Plant) - Loader to Truck Transfer	Alumina	F	85,449	tons	0.00054	0.00026	0.000039	lbs/ton	None	0%			0.02	0.01	0.002
Alumina (To Quarry from Plant) - Truck to Stockpile Transfer	Alumina	F	85,449	tons	0.00054	0.00026	0.000039	lbs/ton	None	0%			0.02	0.01	0.002
Gypsum (Truck) - Truck to Stockpile Transfer	Gypsum	F	240,000	tons	0.0021	0.00101	0.00015	lbs/ton	None	0%			0.26	0.12	0.02
High-Grade Limestone to Quarry (Truck) - Truck to Stockpile Transfer	HighGradeLime	F	250,608	tons	0.045	0.021	0.0032	lbs/ton	None	0%			5.63	2.66	0.40
Railcar to North Hopper RB-VF1	CoalTransfer	NF	333,823	tons	0.0012	0.00057	0.000087	lbs/ton	None	0%			0.20	0.10	0.015
North Hopper RB-VF1 to Belt Conveyor R6-BC1A	CoalTransfer	NF	333,823	tons	0.0012	0.00057	0.000087	lbs/ton	Enclosed	100%			0.00	0.00	0.00
Railcar to South Hopper RB-VF2	CoalTransfer	NF	333,823	tons	0.0012	0.00057	0.000087	lbs/ton	None	0%			0.20	0.10	0.01
South Hopper RB-VF2 to Belt Conveyor R6-BC1A	CoalTransfer	NF	333,823	tons	0.0012	0.00057	0.000087	lbs/ton	Enclosed	100%			0.00	0.00	0.00
Belt Conveyor R6-BC1A to Diverter Gate R6-BC1A-DG1	CoalTransfer	NF	333,823	tons	0.0012	0.00057	0.000087	lbs/ton	3Sided	75%			0.05	0.02	0.00
Diverter Gate R6-BC1A-DG1 to Belt Conveyor R6-BC1	CoalTransfer	NF	333,823	tons	0.0012	0.00057	0.000087	lbs/ton	3Sided	75%			0.05	0.02	0.00
Belt Conveyor R6-BC1 to Diverter Gate R6-DG1	CoalTransfer	NF	333,823	tons	0.0012	0.00057	0.000087	lbs/ton	3Sided	75%			0.05	0.02	0.00
Diverter Gate R6-DG1 to Truck Transfer	CoalTransfer	F	333,823	tons	0.0012	0.00057	0.000087	lbs/ton	None	0%			0.20	0.10	0.01
Coal Truck Transfer to Stockpile	CoalTransfer	F	333,823	tons	0.0012	0.00057	0.000087	lbs/ton	None	0%			0.20	0.10	0.01
Coke / Pet Coke to Plant Stockpile (Rail) - Railcar to Unloading Hopper Transfer	Coke	NF	57,922	tons	0.00093	0.00044	0.000066	lbs/ton	None	0%			0.03	0.01	0.002
Coke / Pet Coke to Plant Stockpile (Rail) - Unloading Hopper Conveyor to Diverter Gate Transfer	Coke	NF	57,922	tons	0.00093	0.00044	0.000066	lbs/ton	3Sided	75%			0.007	0.003	0.0005
Coke / Pet Coke to Plant Stockpile (Rail) - Diverter Gate to Truck Transfer	Coke	F	57,922	tons	0.00093	0.00044	0.000066	lbs/ton	None	0%			0.03	0.01	0.002
Coke / Pet Coke to Plant Stockpile (Rail) - Truck to Stockpile Transfer	Coke	F	57,922	tons	0.00093	0.00044	0.000066	lbs/ton	None	0%			0.03	0.01	0.002
Wood Chip / Pecan Shells (Truck) - Truck to Stockpile Transfer	WoodChip	F	114,400	tons	0.060	0.022	0.022	lbs/ton	None	0%			3.43	1.24	1.24
Wood Chip / Pecan Shells (Truck) - Stockpile to Hopper Transfer	WoodChip	NF	114,400	tons	0.060	0.022	0.022	lbs/ton	None	0%			3.43	1.24	1.24
Tire Chips (Truck) - Truck to Stockpile Transfer	TireChip	F	94,300	tons	0.0012	0.00058	0.000087	lbs/ton	None	0%			0.06	0.03	0.004
Tire Chips (Truck) - Stockpile to Hopper Transfer	TireChip	F	94,300	tons	0.0012	0.00058	0.000087	lbs/ton	None	0%			0.06	0.03	0.004
Cement Imports (Rail) - Railcar Transfer to Storage Silo (Pneumatic)	Cement	NF	250,000	tons	0.0010	0.00034	0.000071	lbs/ton	None	0%			0.12	0.04	0.009
Cement Exports - Storage Silo to Truck	Cement	F	4,471,265	tons	0.0010	0.00034	0.000071	lbs/ton	None	0%			2.21	0.76	0.16
Waste Rock / Overburden to 111/Aggregate Dump (Truck) - Loader to Truck Transfer	WasteRock	F	800,000	tons	0.0103	0.0049	0.00074	lbs/ton	None	0%			4.11	1.94	0.29
Waste Rock / Overburden to 111/Aggregate Dump (Truck) - Truck to Waste Rock/Overburden Pile Transfer	WasteRock	F	800,000	tons	0.0103	0.0049	0.00074	lbs/ton	None	0%			4.11	1.94	0.29
Waste Rock / Overburden to 112/Lower/Upper Ashton (Truck) - Loader to Truck Transfer	WasteRock	F	1,710,993	tons	0.0103	0.0049	0.00074	lbs/ton	None	0%			8.78	4.15	0.63
Waste Rock / Overburden to 112/Lower/Upper Ashton (Truck) - Truck to Waste Rock/Overburden Pile Transfer	WasteRock	F	1,710,993	tons	0.0103	0.0049	0.00074	lbs/ton	None	0%			8.78	4.15	0.63
Waste Rock / Overburden to 119/South Crusher Dump (Truck) - Loader to Truck Transfer	WasteRock	F	2,061,338	tons	0.0103	0.0049	0.00074	lbs/ton	None	0%			10.58	5.01	0.76
Waste Rock / Overburden to 119/South Crusher Dump (Truck) - Truck to Waste Rock/Overburden Pile Transfer	WasteRock	F	2,061,338	tons	0.0103	0.0049	0.00074	lbs/ton	None	0%			10.58	5.01	0.76
Waste Rock / Overburden to 108/North Crusher Dump (Truck) - Loader to Truck Transfer	WasteRock	F	888,572	tons	0.0103	0.0049	0.00074	lbs/ton	None	0%			4.56	2.16	0.33
Waste Rock / Overburden to 108/North Crusher Dump (Truck) - Truck to Waste Rock/Overburden Pile Transfer	WasteRock	F	888,572	tons	0.0103	0.0049	0.00074	lbs/ton	None	0%			4.56	2.16	0.33
Rock Processed at Quarry (Truck) - Loader to Truck Transfer	Rock	F	3,151,572	tons	0.0063	0.0030	0.00045	lbs/ton	None	0%			9.97	4.72	0.71
Rock Processed at Quarry (Truck) - Truck to Quarry Crusher Transfer	Rock	NF	3,151,572	tons	0.0063	0.0030	0.00045	lbs/ton	None	0%			9.97	4.72	0.71
Rock Processed at Stacker / Reclaimer Building (Conveyor) - Conveyor to S/R Building Transfer	Rock	F	3,151,572	tons	0.0063	0.0030	0.00045	lbs/ton	Inside	50%			4.99	2.36	0.36
Rock Processed at Stacker / Reclaimer Building (Conveyor) - Reclaimer to Conveyor Transfer	Rock	NF	3,151,572	tons	0.0063	0.0030	0.00045	lbs/ton	Inside	50%			4.99	2.36	0.36
Low-Grade Limestone (Quarry) - Loader to Truck Transfer	LowGradeLime	F	118,751	tons	0.019	0.0090	0.0014	lbs/ton	None	0%			1.13	0.54	0.08
Low-Grade Limestone (Quarry) - Truck to Quarry Crusher Transfer	LowGradeLime	NF	118,751	tons	0.019	0.0090	0.0014	lbs/ton	None	0%			1.13	0.54	0.08
Low-Grade Limestone at Stacker / Reclaimer Building (Conveyor) - Conveyor to S/R Building Transfer	LowGradeLime	NF	118,751	tons	0.019	0.0090	0.0014	lbs/ton	Inside	50%			0.57	0.27	0.04
Low-Grade Limestone (Truck) - Loader to Truck Transfer	LowGradeLime	F	118,751	tons	0.019	0.0090	0.0014	lbs/ton	Inside	50%			0.57	0.27	0.04
Low-Grade Limestone (Truck) - Truck to Stockpile Transfer	LowGradeLime	F	118,751	tons	0.019	0.0090	0.0014	lbs/ton	None	0%			1.13	0.54	0.08
Low-Grade Limestone (Loader) - Stockpile to D4 Hopper Transfer	LowGradeLime	NF	84,888	tons	0.019	0.0090	0.0014	lbs/ton	None	0%			0.81	0.38	0.06
High Lime Rock to Quarry Crusher (Truck) - Loader to Truck Transfer	HighGradeLime	F	60,000	tons	0.045	0.021	0.0032	lbs/ton	None	0%			1.35	0.64	0.10
High Lime Rock to Quarry Crusher (Truck) - Truck to Crusher Transfer	HighGradeLime	NF	60,000	tons	0.045	0.021	0.0032	lbs/ton	None	0%			1.35	0.64	0.10
Imported High Lime Rock to Quarry Crusher (Truck) - Loader to Truck Transfer	HighGradeLime	F	248,120	tons	0.045	0.021	0.0032	lbs/ton	None	0%			5.57	2.63	0.40
Imported High Lime Rock to Quarry Crusher (Truck) - Truck to Crusher Transfer	HighGradeLime	NF	248,120	tons	0.045	0.021	0.0032	lbs/ton	None	0%			5.57	2.63	0.40
High Lime Rock to Stacker / Reclaimer Building (Conveyor) - Conveyor to S/R Building Transfer	HighGradeLime	NF	248,120	tons	0.045	0.021	0.0032	lbs/ton	Inside	50%			2.78	1.32	0.20
High Lime Rock to D4 Feed Bin (Conveyor) - Reclaimer to Conveyor Transfer	HighGradeLime	NF	109,687	tons	0.045	0.021	0.0032	lbs/ton	Inside	50%			1.23	0.58	0.09
High Lime Rock from Stacker /Reclaimer Building to Stockpile (Truck) - Loader to Truck Transfer	HighGradeLime	F	119,069	tons	0.045	0.021	0.0032	lbs/ton	Inside	50%			1.34	0.63	0.10
High Lime Rock from Stacker /Reclaimer Building to Stockpile (Truck) - Truck to Stockpile Transfer	HighGradeLime	F	119,069	tons	0.045	0.021	0.0032	lbs/ton	None	0%			2.67	1.26	0.19
High Lime Rock to D4 Feed Bin (Loader) - Stockpile to Hopper Transfer	HighGradeLime	NF	81,278	tons	0.045	0.021	0.0032	lbs/ton	None	0%			1.82	0.86	0.13
High Lime Rock to D3 Hopper (Truck) - Loader to Truck Transfer	HighGradeLime	F	52,000	tons	0.045	0.021	0.0032	lbs/ton	None	0%			1.17	0.55	0.08
High Lime Rock to D3 Hopper (Truck) - Truck to Working Stockpile Transfer	HighGradeLime	F	52,000	tons	0.045	0.021	0.0032	lbs/ton	None	0%			1.17	0.55	0.08
High Lime Rock to D3 Hopper (Truck) - Working Stockpile to D3 Hopper Transfer	HighGradeLime	NF	52,000	tons	0.045	0.021	0.0032	lbs/ton	WSpray	90%			0.12	0.06	0.008
High Lime Rock to D3 Hopper (Truck) - D3 Hopper to Conveyor Transfer	HighGradeLime	NF	52,000	tons	0.045	0.021	0.0032	lbs/ton	None	0%			1.17	0.55	0.08
High Lime Rock from Stockpile to Crusher 1 (Truck) - Loader to Truck Transfer	HighGradeLime	F	100,000	tons	0.045	0.021	0.0032	lbs/ton	None	0%			2.24	1.06	0.16
High Lime Rock from Stockpile to Crusher 1 (Truck) - Truck to Crusher 1 Transfer	HighGradeLime	NF	100,000	tons	0.045	0.021	0.0032	lbs/ton	None	0%			2.24	1.06	0.16
High Lime Rock from Stockpile to Crusher 1 (Truck) - Crusher 1 Conveyor to OH Crane Building Transfer	HighGradeLime	NF	100,000	tons	0.045	0.021	0.0032	lbs/ton	3Sided	75%			0.56	0.27	0.04
High Lime Rock from Quarry Crusher (Conveyor) - Conveyor to OH Crane Building	HighGradeLime	NF	27,611	tons	0.045	0.021	0.0032	lbs/ton	3Sided	75%			0.15	0.07	0.01
High Lime Rock to CM7 Mill in OH Crane Building (Crane)- Overhead Crane to Mill Feed Bin Transfer	HighGradeLime	NF	35,750	tons	0.045	0.021	0.0032	lbs/ton	3Sided	75%			0.20	0.09	0.01
High Lime Rock to CM7 Mill in OH Crane Building (Crane) - Mill Feed Bin to Conveyor Transfer	HighGradeLime	F	35,750	tons	0.045	0.021	0.0032	lbs/ton	3Sided	75%			0.20	0.09	0.01
High Lime Rock to D2 Hopper (Crane) - Overhead Crane to Mill Feed Bin Transfer	HighGradeLime	NF	54,000	tons	0.045	0.021	0.0032	lbs/ton	3Sided	75%			0.30	0.14	0.02
High Lime Rock to D2 Hopper (Crane) - Mill Feed Bin to Conveyor Transfer	HighGradeLime	NF	54,000	tons	0.045	0.021	0.0032	lbs/ton	3Sided	75%			0.30	0.14	0.02
Alumina Material at Quarry (Truck) - Loader to Truck Transfer (Quarry Stockpile)	Alumina	F	62,362	tons	0.00054	0.00026	0.000039	lbs/ton	None	0%			0.02	0.008	0.001
Alumina Material at Quarry (Truck) -Truck to Quarry Face Transfer	Alumina	F	62,362	tons	0.00054	0.00026	0.000039	lbs/ton	None	0%			0.02	0.008	0.001
Alumina Material at Quarry (Truck) - Loader to Truck Transfer (Quarry Face)	Alumina	F	62,362	tons	0.00054	0.00026	0.000039	lbs/ton	None	0%			0.02	0.008	0.001
Alumina Material at Quarry (Truck) -Truck to Quarry Crusher Transfer	Alumina	NF	62,362	tons	0.00054	0.00026	0.000039	lbs/ton	None	0%			0.02	0.008	0.001
Alumina Material at Quarry (Truck) - Conveyor to S/R Building Transfer	Alumina	NF	62,362	tons	0.00054	0.00026	0.000039	lbs/ton	Inside	50%			0.01	0.004	0.0006

Alumina Material at Quarry (Truck) - Reclaimer to Conveyor Transfer	Alumina	NF	62,362	tons	0.00054	0.00026	0.000039	lbs/ton	Inside	50%	0.01	0.004	0.0006
Alumina at Plant (Loader) - Loader to D4 Hopper Transfer	Alumina	NF	40,989	tons	0.00054	0.00026	0.000039	lbs/ton	None	0%	0.01	0.005	0.0008
Bottom Ash at Quarry (Truck) - Loader to Truck Transfer (Quarry Stockpile)	BottAsh	NF	4,859	tons	0.000095	0.000045	0.0000068	lbs/ton	None	0%	0.0002	0.0001	0.00002
Bottom Ash at Quarry (Truck) -Truck to Quarry Face Transfer	BottAsh	F	4,859	tons	0.000095	0.000045	0.0000068	lbs/ton	None	0%	0.0002	0.0001	0.00002
Bottom Ash at Quarry (Truck) - Loader to Truck Transfer (Quarry Face)	BottAsh	NF	4,859	tons	0.000095	0.000045	0.0000068	lbs/ton	None	0%	0.0002	0.0001	0.00002
Bottom Ash at Quarry (Truck) -Truck to Quarry Crusher Transfer	BottAsh	NF	4,859	tons	0.000095	0.000045	0.0000068	lbs/ton	None	0%	0.0002	0.0001	0.00002
Bottom Ash at Quarry (Truck) - Conveyor to S/R Building Transfer	BottAsh	NF	4,859	tons	0.000095	0.000045	0.0000068	lbs/ton	Inside	50%	0.0001	0.00005	0.000008
Bottom Ash at Quarry (Truck) - Reclaimer to Conveyor Transfer	BottAsh	NF	4,859	tons	0.000095	0.000045	0.0000068	lbs/ton	Inside	50%	0.0001	0.00005	0.000008
Iron Material at Quarry (Truck) - Loader to Truck Transfer (Quarry Stockpile)	Iron	F	8,352	tons	0.014	0.0065	0.00098	lbs/ton	None	0%	0.06	0.03	0.004
Iron Material at Quarry (Truck) -Truck to Quarry Face Transfer	Iron	F	8,352	tons	0.014	0.0065	0.00098	lbs/ton	None	0%	0.06	0.03	0.004
Iron Material at Quarry (Truck) - Loader to Truck Transfer (Quarry Face)	Iron	F	8,352	tons	0.014	0.0065	0.00098	lbs/ton	None	0%	0.06	0.03	0.004
Iron Material at Quarry (Truck) -Truck to Quarry Crusher Transfer	Iron	NF	8,352	tons	0.014	0.0065	0.00098	lbs/ton	None	0%	0.06	0.03	0.004
Iron Material at Quarry (Truck) - Conveyor to S/R Building Transfer	Iron	F	8,352	tons	0.014	0.0065	0.00098	lbs/ton	Inside	50%	0.03	0.01	0.002
Iron Material at Quarry (Truck) - Reclaimer to Conveyor Transfer	Iron	NF	8,352	tons	0.014	0.0065	0.00098	lbs/ton	Inside	50%	0.03	0.01	0.002
Iron Material at Plant (Loader) - Loader to D4 Hopper Transfer	Iron	NF	86,209	tons	0.014	0.0065	0.00098	lbs/ton	None	0%	0.59	0.28	0.04
Gypsum to Crusher 1 (Loader) - Loader to Crusher 1 Transfer	Gypsum	NF	232,909	tons	0.0021	0.00101	0.00015	lbs/ton	None	0%	0.25	0.12	0.02
Gypsum to Crusher 1 (Loader) - Crusher 1 Conveyor to OH Crane Building Transfer	Gypsum	NF	232,909	tons	0.0021	0.00101	0.00015	lbs/ton	3Sided	75%	0.06	0.03	0.004
Gypsum to D2 Mill (Crane) - OH Crane to D2 Mill Feed Bin Transfer	Gypsum	NF	81,000	tons	0.0021	0.00101	0.00015	lbs/ton	3Sided	75%	0.02	0.010	0.002
Gypsum to D2 Mill (Crane) - D2 Mill Feed Bin to Conveyor Transfer	Gypsum	NF	81,000	tons	0.0021	0.00101	0.00015	lbs/ton	3Sided	75%	0.02	0.010	0.002
Gypsum to Other Finish Mills (Crane) - OH Crane to Other Finish Mill Feed Bins Transfer	Gypsum	NF	156,781	tons	0.0021	0.00101	0.00015	lbs/ton	3Sided	75%	0.04	0.02	0.003
Gypsum to D2 Mill (Crane) - Other Finish Mill Feed Bins to Conveyor Transfer	Gypsum	NF	156,781	tons	0.0021	0.00101	0.00015	lbs/ton	3Sided	75%	0.04	0.02	0.003
Coal Processing (Conveyor) - Conveyor to Roll Crusher Transfer	Coal	NF	346,737	tons	0.0012	0.00057	0.000087	lbs/ton	None	0%	0.21	0.10	0.02
Coal Processing (Conveyor) - Conveyor to Coal/Coke Mill Feed Bins Transfer	Coal	NF	346,737	tons	0.0012	0.00057	0.000087	lbs/ton	3Sided	75%	0.05	0.02	0.004
Coke Reclaim (Loader) - Loader to Reclaimed Coke Hopper Transfer	Coke	NF	25,564	tons	0.00093	0.00044	0.000066	lbs/ton	None	0%	0.01	0.006	0.0008
Coke Reclaim (Conveyor) - Conveyor to Roll Crusher Transfer	Coke	NF	25,564	tons	0.00093	0.00044	0.000066	lbs/ton	None	0%	0.01	0.006	0.0008
Coke Reclaim (Conveyor) - Conveyor to Coal/Coke Mill Feed Bins Transfer	Coke	NF	25,564	tons	0.00093	0.00044	0.000066	lbs/ton	3Sided	75%	0.003	0.001	0.0002
Horseshoe to Inert Material Storage (Truck) - Loader to Truck Transfer	Inert	F	6,000	tons	0.081	0.038	0.0058	lbs/ton	None	0%	0.24	0.11	0.02
Horseshoe to Inert Material Storage (Truck) - Truck to Inert Landfill Transfer	Inert	F	6,000	tons	0.081	0.038	0.0058	lbs/ton	None	0%	0.24	0.11	0.02
Plant to Horseshoe (Truck) - Loader to Truck Transfer	Inert	F	6,000	tons	0.081	0.038	0.0058	lbs/ton	None	0%	0.24	0.11	0.02
Plant to Horseshoe (Truck) - Truck to Horseshoe Transfer	Inert	F	6,000	tons	0.081	0.038	0.0058	lbs/ton	None	0%	0.24	0.11	0.02
D4 Material Bypass (Loader) - D4 Bin to Loader Transfer	D4Bypass	F	11,868	tons	0.0093	0.0044	0.00067	lbs/ton	None	0%	0.06	0.03	0.004
D4 Material Bypass (Loader) - Loader to D4 Bypass Stockpile Transfer	D4Bypass	NF	11,868	tons	0.0093	0.0044	0.00067	lbs/ton	WindBreak	70%	0.02	0.008	0.001
D4 Material Bypass (Loader) - Stockpile to Bypass Feed Hopper	D4Bypass	NF	11,868	tons	0.0093	0.0044	0.00067	lbs/ton	None	0%	0.06	0.03	0.004
D4 Material Bypass (Conveyor) - Hopper Conveyor to OH Crane Building	D4Bypass	NF	11,868	tons	0.0093	0.0044	0.00067	lbs/ton	3Sided	75%	0.01	0.007	0.0010
D4 Material Bypass (Crane) - OH Crane to D4 Material Bypass Stockpile Transfer	D4Bypass	F	11,868	tons	0.0093	0.0044	0.00067	lbs/ton	3Sided	75%	0.01	0.007	0.0010
D4 Material Bypass (Crane) - OH Crane to Mill Feed Bin Transfer	D4Bypass	NF	11,868	tons	0.0093	0.0044	0.00067	lbs/ton	3Sided	75%	0.01	0.007	0.0010
Clinker (Crane) - Clinker from Kiln 1 to OH Crane Building Transfer	Clinker	NF	166,440	tons	0.29	0.14	0.021	lbs/ton	3Sided	75%	6.05	2.86	0.43
Clinker (Crane) - Clinker from Kilns 2- 4 to OH Crane Building Transfer	Clinker	F	2,116,465	tons	0.29	0.14	0.021	lbs/ton	3Sided	75%	76.99	36.41	5.51
Clinker (Crane) - OH Crane Building to Stockpile Transfer	Clinker	F	2,221,419	tons	0.29	0.14	0.021	lbs/ton	3Sided	75%	80.80	38.22	5.79
Clinker (Crane) - OH Crane Building to Outside Clinker Stockpile Transfer	Clinker	F	61,579	tons	0.29	0.14	0.021	lbs/ton	None	0%	8.96	4.24	0.64
Clinker (Truck) - Loader to Truck Transfer	Clinker	F	61,579	tons	0.29	0.14	0.021	lbs/ton	None	0%	8.96	4.24	0.64
Clinker (Truck) - Truck to Clinker Stockpile Transfer	Clinker	F	61,579	tons	0.29	0.14	0.021	lbs/ton	None	0%	8.96	4.24	0.64
Clinker Reclaim (Truck) - Loader to Truck Transfer	ClinkerReclaim	NF	175,266	tons	0.038	0.018	0.0027	lbs/ton	None	0%	3.31	1.57	0.24
Clinker Reclaim (Truck) - Truck to OH Crane Building Transfer	ClinkerReclaim	F	175,266	tons	0.038	0.018	0.0027	lbs/ton	None	0%	3.31	1.57	0.24
Clinker Reclaim (Crane) - OH Crane to Stockpile Transfer	ClinkerReclaim	F	175,266	tons	0.038	0.018	0.0027	lbs/ton	3Sided	75%	0.83	0.39	0.06
Clinker Conveyor Bypass (Truck) - Clinker Conveyor Bypass Bin to Truck Transfer	Clinker	F	29,642	tons	0.29	0.14	0.021	lbs/ton	None	0%	4.31	2.04	0.31
Clinker Conveyor Bypass (Truck) - Truck to OH Crane Building Transfer	Clinker	NF	29,642	tons	0.29	0.14	0.021	lbs/ton	None	0%	4.31	2.04	0.31
Clinker to D2 Mill (Crane) - OH Crane to D2 Mill Feed Bin Transfer	Clinker	NF	1,082,110	tons	0.29	0.14	0.021	lbs/ton	3Sided	75%	39.36	18.62	2.82
Clinker to D2 Mill (Crane) - D2 Mill Feed Bin to Conveyor Transfer	Clinker	NF	1,082,110	tons	0.29	0.14	0.021	lbs/ton	3Sided	75%	39.36	18.62	2.82
Clinker to Other Finish Mills (Crane) - OH Crane to Other Finish Mill Feed Bins Transfer	Clinker	NF	2,429,178	tons	0.29	0.14	0.021	lbs/ton	3Sided	75%	88.36	41.79	6.33
Clinker to Other Finish Mills (Crane) - Other Finish Mill Feed Bins to Conveyor Transfer	Clinker	NF	2,429,178	tons	0.29	0.14	0.021	lbs/ton	3Sided	75%	88.36	41.79	6.33
Clinker to Quarry Crusher (Truck) - Loader to Truck Transfer	Clinker	F	1,000	tons	0.29	0.14	0.021	lbs/ton	None	0%	0.15	0.07	0.010
Clinker to Quarry Crusher (Truck) - Truck to Quarry Crusher Transfer	Clinker	NF	1,000	tons	0.29	0.14	0.021	lbs/ton	None	0%	0.15	0.07	0.010
Clinker to Quarry Crusher (Conveyor) - Conveyor to Stacker / Reclaimer Building Transfer	Clinker	NF	1,000	tons	0.29	0.14	0.021	lbs/ton	Inside	50%	0.07	0.03	0.005
Clinker to Quarry Crusher (Loader) - Loader to Truck Transfer (S/R Building West End)	Clinker	F	1,000	tons	0.29	0.14	0.021	lbs/ton	Inside	50%	0.07	0.03	0.005
Clinker to Quarry Crusher (Truck) - Truck to OH Crane Building Transfer	Clinker	NF	1,000	tons	0.29	0.14	0.021	lbs/ton	None	0%	0.15	0.07	0.010
Clinker to Quarry Crusher (Crane) - OH Crane to Clinker Stockpile Transfer	Clinker	F	1,000	tons	0.29	0.14	0.021	lbs/ton	3Sided	75%	0.04	0.02	0.003
Clinker to Quarry Crusher (Crane) - OH Crane to Mill Feed Bin Transfer	Clinker	NF	1,000	tons	0.29	0.14	0.021	lbs/ton	3Sided	75%	0.04	0.02	0.003
Clinker to Quarry Crusher (Conveyor) - Mill Feed Bin to Conveyor Transfer	Clinker	NF	1,000	tons	0.29	0.14	0.021	lbs/ton	3Sided	75%	0.04	0.02	0.003
Kiln Brick (Loader) - Loader to Truck Transfer	Clinker	F	917	tons	0.29	0.14	0.021	lbs/ton	None	0%	0.13	0.06	0.010
Kiln Brick (Truck) - Truck to Quarry Crusher Transfer	Clinker	NF	917	tons	0.29	0.14	0.021	lbs/ton	None	0%	0.13	0.06	0.010
Kiln Brick (Conveyor) - Conveyor to Stacker / Reclaimer Building Transfer	Clinker	NF	917	tons	0.29	0.14	0.021	lbs/ton	Inside	50%	0.07	0.03	0.005
Kiln Brick (Conveyor) - Reclaimer to Conveyor Transfer	Clinker	NF	917	tons	0.29	0.14	0.021	lbs/ton	Inside	50%	0.07	0.03	0.005
Clay to Quarry (Truck) - Truck to Stockpile Transfer	Clay	F	33,746	tons	0.0023	0.00108	0.00016	lbs/ton	None	0%	0.04	0.02	0.003
Clay at Quarry (Truck) - Loader to Truck Transfer (Stockpile)	Clay	F	32,238	tons	0.0023	0.00108	0.00016	lbs/ton	None	0%	0.04	0.02	0.003
Clay at Quarry (Truck) - Truck to Quarry Face Transfer	Clay	F	32,238	tons	0.0023	0.00108	0.00016	lbs/ton	None	0%	0.04	0.02	0.003
Clay at Quarry (Truck) - Loader to Truck Transfer (Quarry Face)	Clay	F	32,238	tons	0.0023	0.00108	0.00016	lbs/ton	None	0%	0.04	0.02	0.003
Clay at Quarry (Truck) - Truck to Quarry Crusher Transfer	Clay	NF	32,238	tons	0.0023	0.00108	0.00016	lbs/ton	None	0%	0.04	0.02	0.003
Clay at Quarry (Conveyor) - Conveyor to Stacker / Reclaimer Building Transfer	Clay	NF	32,238	tons	0.0023	0.00108	0.00016	lbs/ton	Inside	50%	0.02	0.009	0.001
Clay at Quarry (Conveyor) - Reclaimer to Conveyor Transfer	Clay	NF	32,238	tons	0.0023	0.00108	0.00016	lbs/ton	Inside	50%	0.02	0.009	0.001
1" High Grade Limestone (Truck) - Loader to Truck Transfer	HighGradeLime	F	30,000	tons	0.045	0.021	0.0032	lbs/ton	None	0%	0.67	0.32	0.05
1" High Grade Limestone (Truck) -Truck to Plant Stockpile Transfer	HighGradeLime	F	30,000	tons	0.045	0.021	0.0032	lbs/ton	None	0%	0.67	0.32	0.05
AB (3/8" Plus) (Truck) - Loader to Truck Transfer	AggTrnsfr	F	5,000	tons	0.0052	0.0025	0.00037	lbs/ton	None	0%	0.01	0.006	0.0009
AB (3/8" Plus) (Truck) - Truck to Plant Stockpile Transfer	AggTrnsfr	F	5,000	tons	0.0052	0.0025	0.00037	lbs/ton	None	0%	0.01	0.006	0.0009
Lime Transfer from Truck Offload to Lime Bin H7-LJ-SB1	LimeTr	NF	3,066	tons	0.61	0.21	0.032	lbs/ton	H7-LJ-SB1-DC	99%	0.009	0.003	0.0005
Transfer from Conveyor (B2-BC4) to Conveyor (B2-BC5)	AggTrnsfr	NF	876,000	tons	0.0052	0.0025	0.0004	lbs/ton	WSpray	90%	0.23	0.11	0.02
Transfer from Conveyor (B2-BC5) to Conveyor (B2-BC6)	AggTrnsfr	NF	876,000	tons	0.0052	0.0025	0.0004	lbs/ton	WSpray	90%	0.23	0.11	0.02
Transfer from Conveyor (B2-BC6) to Radial Stacker (B2-TS1)	AggTrnsfr	NF	876,000	tons	0.0052	0.0025	0.0004	lbs/ton	WSpray	90%	0.23	0.11	0.02
Transfer from Radial Stacker (B2-TS1) to Fines Storage Pile	AggTrnsfr	F	876,000	tons	0.0052	0.0025	0.0004	lbs/ton	WSpray	90%	0.23	0.11	0.02
Front-End Loader to Haul Truck Transfer (for Waste Dump)	AggTrnsfr	F	876,000	tons	0.0052	0.0025	0.0004	lbs/ton	BOP	0%	2.28	1.08	0.16
Alternative Fuels Material Transfers	AltFuelsDeliv	F	1,026,958	tons	0.0006	0.0003	0.0000	lbs/ton	None	0%	0.32	0.15	0.02
B2-VG1 to B2-BC7	Rock	NF	3,151,572	tons	0.0063	0.0030	0.0005	lbs/ton	None	0%	9.97	4.72	0.71
B2-BC7 to B2-BC8	Rock	NF	3,151,572	tons	0.0063	0.0030	0.0005	lbs/ton	Enclosed	100%	0.00	0.00	0.00
B2-BC8 to B2-BC3	Rock	NF	3,151,572	tons	0.0063	0.0030	0.0005	lbs/ton	Enclosed	100%	0.00	0.00	0.00
B2-BC3 to B2-BC1	Rock	NF	3,151,572	tons	0.0063	0.0030	0.0005	lbs/ton	Enclosed	100%	0.00	0.00	0.00
B2-BC1 to B3-VS1	Rock	NF	6,303,144	tons	0.0063	0.0030	0.0005	lbs/ton	None	0%	19.95	9.43	1.43
B3-VS1 to B3-BC3	Rock	NF	3,151,572	tons	0.0063	0.0030	0.0005	lbs/ton	None	0%	9.97	4.72	0.71
B3-BC3 to Surge Building Pile	Rock	F	3,151,572	tons	0.0063	0.0030	0.0005	lbs/ton	Inside	50%	4.99	2.36	0.36
B3-VS1 to B3-BC1	Rock	NF	3,151,572	tons	0.0063	0.0030	0.0005	lbs/ton	None	0%	9.97	4.72	0.71
B3-BC1 to B3-BC2	Rock	NF	3,151,572	tons	0.0063	0.0030	0.0005	lbs/ton	None	0%	9.97	4.72	0.71
B3-BC2 to B3-IC1	Rock	NF	3,151,572	tons	0.0063	0.0030	0.0005	lbs/ton	None	0%	9.97	4.72	0.71
B3-IC1 to B2-BF1	Rock	NF	3,151,572	tons	0.0063	0.0030	0.0005	lbs/ton	None	0%	9.97	4.72	0.71

B2-BF1 to B2-BC1	Rock	NF	3,151,572	tons	0.0063	0.0030	0.0005	lbs/ton	None	0%	9.97	4.72	0.71
Wind Erosion of Stockpiles (Plant and Quarry)													
Wind Erosion of Bauxite / Alumina Stockpiles (Plant and Quarry)	WindAlum	F	1.51	acres	6.68	3.34	0.50	lbs/acre-day	None	0%	1.84	0.92	0.14
Wind Erosion of Bottom Ash Stockpiles	WindAsh	F	0.32	acres	86.35	43.18	6.48	lbs/acre-day	None	0%	5.06	2.53	0.38
Wind Erosion of High Rock / High Grade Limestone Stockpiles (Plant and Quarry)	WindHigh	F	2.33	acres	0.97	0.49	0.073	lbs/acre-day	None	0%	0.41	0.21	0.03
Wind Erosion of Low Rock / Low Grade Limestone Stockpiles	WindLow	F	1.28	acres	0.97	0.49	0.073	lbs/acre-day	None	0%	0.23	0.11	0.02
Wind Erosion of Clinker Stockpiles	WindClinker	F	2.28	acres	25.40	12.70	1.90	lbs/acre-day	None	0%	10.55	5.27	0.79
Wind Erosion of Clay Stockpiles	WindClay	F	0.38	acres	25.40	12.70	1.90	lbs/acre-day	None	0%	1.76	0.88	0.13
Wind Erosion of Iron Stockpiles	WindIron	F	3.74	acres	86.35	43.18	6.48	lbs/acre-day	3Sided	75%	14.74	7.37	1.11
Wind Erosion of Gypsum Stockpiles	WindGypsum	F	0.43	acres	6.68	3.34	0.50	lbs/acre-day	None	0%	0.52	0.26	0.04
Wind Erosion of D3 Hopper Working Stockpiles	WindD3	F	0.04	acres	0.97	0.49	0.073	lbs/acre-day	None	0%	0.008	0.004	0.0006
Wind Erosion of Coal Stockpiles	WindCoal	F	1.11	acres	0.62	0.31	0.047	lbs/acre-day	None	0%	0.13	0.06	0.01
Wind Erosion of Coke / Pet Coke Stockpiles	WindCoke	F	1.19	acres	3.48	1.74	0.26	lbs/acre-day	None	0%	0.76	0.38	0.06
Wind Erosion of Wood Chip / Pecan Shell Stockpile	WindWChips	F	0.08	acres	0.73	0.36	0.054	lbs/acre-day	None	0%	0.01	0.005	0.0008
Wind Erosion of Fines Storage Pile	AWindAgg	F	1.00	acres	10.74	5.37	0.81	lbs/acre-yr	BOP	0%	0.01	0.00	0.00
Baghouses													
Baghouse B2-DC1 (Primary Crushing Process Area)	B2-DC1	NF	8,760	hrs	6.49	6.49	2.86	lbs/hr	None	0%	28.42	28.42	12.53
Baghouse B3-DC1 (Primary Crushing Process Area)	B3-DC1	NF	8,760	hrs	4.26	4.26	1.88	lbs/hr	None	0%	18.67	18.67	8.23
Baghouse AC-DC3 (Raw Grinding - AC Area)	AC-DC3	NF	8,760	hrs	6.50	6.50	2.87	lbs/hr	None	0%	28.46	28.46	12.55
Baghouse AC1-DC1 (Raw Grinding - AC Area)	AC1-DC1	NF	8,760	hrs	6.50	6.50	2.32	lbs/hr	None	0%	28.46	28.46	10.16
Baghouse AC2-DC1 (Raw Grinding - AC Area)	AC2-DC1	NF	8,760	hrs	2.58	2.58	0.92	lbs/hr	None	0%	11.32	11.32	4.04
Baghouse AC3-DC1 (Raw Grinding - AC Area)	AC3-DC1	NF	8,760	hrs	1.53	1.53	0.55	lbs/hr	None	0%	6.72	6.72	2.40
Baghouse AC4-DC1 (Raw Grinding - AC Area)	AC4-DC1	NF	8,760	hrs	1.70	1.70	0.61	lbs/hr	None	0%	7.45	7.45	2.66
Baghouse AC-BE2-DC (Raw Grinding - AC Area)	AC-BE2-DC	NF	8,760	hrs	1.55	1.55	0.58	lbs/hr	None	0%	6.79	6.79	2.55
Baghouse B5-DC1 (Primary Crushing Process Area)	B5-DC1	NF	8,760	hrs	0.89	0.89	0.39	lbs/hr	None	0%	3.91	3.91	1.72
Baghouse B5-DC2 (Primary Crushing Process Area)	B5-DC2	NF	8,760	hrs	0.39	0.39	0.17	lbs/hr	None	0%	1.71	1.71	0.75
Baghouse B5-DC3 (Primary Crushing Process Area)	B5-DC3	NF	8,760	hrs	0.68	0.68	0.30	lbs/hr	None	0%	2.97	2.97	1.31
Baghouse B7-DC1 (Rock Reclaim Process Area)	B7-DC1	NF	8,760	hrs	0.50	0.50	0.22	lbs/hr	None	0%	2.19	2.19	0.97
Baghouse B8-DC1 (Rock Reclaim Process Area)	B8-DC1	NF	8,760	hrs	0.65	0.65	0.28	lbs/hr	None	0%	2.83	2.83	1.25
Baghouse B8-DC2 (Primary Crushing Process Area)	B8-DC2	NF	8,760	hrs	1.20	1.20	0.53	lbs/hr	None	0%	5.26	5.26	2.32
Baghouse B9-DC1 (Primary Crushing Process Area)	B9-DC1	NF	8,760	hrs	1.25	1.25	0.55	lbs/hr	None	0%	5.47	5.47	2.41
Baghouse B9-DC2 (Primary Crushing Process Area)	B9-DC2	NF	8,760	hrs	5.94	5.94	2.62	lbs/hr	None	0%	26.01	26.01	11.47
Baghouse B9-DC3 (Primary Crushing Process Area)	B9-DC3	NF	8,760	hrs	3.15	3.15	1.39	lbs/hr	None	0%	13.82	13.82	6.09
Baghouse B9-DC5 (Primary Crushing Process Area)	B9-DC5	NF	8,760	hrs	0.96	0.96	0.42	lbs/hr	None	0%	4.20	4.20	1.85
Baghouse C2-DC1 (Rock Reclaim Process Area)	C2-DC1	NF	8,760	hrs	0.34	0.34	0.15	lbs/hr	None	0%	1.48	1.48	0.65
Baghouse C2-DC2 (Rock Reclaim Process Area)	C2-DC2	NF	8,760	hrs	0.12	0.12	0.052	lbs/hr	None	0%	0.52	0.52	0.23
Baghouse C2-DC3 (Rock Reclaim Process Area)	C2-DC3	NF	8,760	hrs	0.47	0.47	0.21	lbs/hr	None	0%	2.08	2.08	0.92
Baghouse C2-DC11 (Rock Reclaim Process Area)	C2-DC11	NF	8,760	hrs	0.11	0.11	0.050	lbs/hr	None	0%	0.49	0.49	0.22
Baghouse C2-DC4 (Rock Reclaim Process Area)	C2-DC4	NF	8,760	hrs	0.11	0.11	0.048	lbs/hr	None	0%	0.48	0.48	0.21
Baghouse C2-DC6 (Rock Reclaim Process Area)	C2-DC6	NF	8,760	hrs	0.079	0.079	0.035	lbs/hr	None	0%	0.34	0.34	0.15
Baghouse C2-DC8 (Rock Reclaim Process Area)	C2-DC8	NF	8,760	hrs	0.11	0.11	0.048	lbs/hr	None	0%	0.48	0.48	0.21
Baghouse C2-DC10 (Rock Reclaim Process Area)	C2-DC10	NF	8,760	hrs	0.11	0.11	0.049	lbs/hr	None	0%	0.48	0.48	0.21
Baghouse C2-DC5 (Rock Reclaim Process Area)	C2-DC5	NF	8,760	hrs	0.47	0.47	0.21	lbs/hr	None	0%	2.04	2.04	0.90
Baghouse C2-DC7 (Rock Reclaim Process Area)	C2-DC7	NF	8,760	hrs	0.10	0.10	0.045	lbs/hr	None	0%	0.45	0.45	0.20
Baghouse C2-DC9 (Rock Reclaim Process Area)	C2-DC9	NF	8,760	hrs	0.071	0.071	0.031	lbs/hr	None	0%	0.31	0.31	0.14
Baghouse C2-DC12 (Rock Reclaim Belt Conveyor)	C2-DC12	NF	8,760	hrs	0.11	0.11	0.049	lbs/hr	None	0%	0.48	0.48	0.21
Baghouse C2-DC13 (Rock Reclaim Belt Conveyor)	C2-DC13	NF	8,760	hrs	0.12	0.12	0.054	lbs/hr	None	0%	0.53	0.53	0.24
Baghouse D2-DC1 (Raw Grinding - Secondary Crushing)	D2-DC1	NF	8,760	hrs	0.89	0.89	0.39	lbs/hr	None	0%	3.90	3.90	1.72
Baghouse D2-DC3 (Raw Grinding - Secondary Crushing)	D2-DC3	NF	8,760	hrs	0.038	0.038	0.017	lbs/hr	None	0%	0.16	0.16	0.07
Baghouse D2-DC5 (Raw Grinding - Secondary Crushing)	D2-DC5	NF	8,760	hrs	0.061	0.061	0.027	lbs/hr	None	0%	0.27	0.27	0.12
Baghouse D2-DC6 (Raw Grinding - Secondary Crushing)	D2-DC6	NF	8,760	hrs	0.061	0.061	0.027	lbs/hr	None	0%	0.27	0.27	0.12
Baghouse D2-DC7 (Raw Grinding - Secondary Crushing)	D2-DC7	NF	8,760	hrs	0.061	0.061	0.027	lbs/hr	None	0%	0.27	0.27	0.12
Baghouse D2-1-DC1 (Finish Grinding - D2 Mill)	D2-1-DC1	NF	8,760	hrs	0.50	0.50	0.18	lbs/hr	None	0%	2.20	2.20	0.79
Baghouse F2-DC1 (Homogenizing Silo - Kiln 4)	F2-DC1	NF	8,760	hrs	0.41	0.41	0.15	lbs/hr	None	0%	1.80	1.80	0.68

Baghouse F2-DC4 Homogenizing and Kiln Feed Silos	F2-DC4	NF	8,760	hrs	0.031	0.031	0.012	lbs/hr	None	0%	0.13	0.13	0.05
Baghouse F2-SB2-DC Homogenizing and Kiln Feed Silos	F2-SB2-DC	NF	8,760	hrs	0.93	0.93	0.35	lbs/hr	None	0%	4.05	4.05	1.52
Baghouse F3-DC1 (Feed - Kiln 4)	F3-DC1	NF	8,760	hrs	0.51	0.51	0.19	lbs/hr	None	0%	2.24	2.24	0.84
Baghouse F3-DC2 (Feed - Kiln 4)	F3-DC2	NF	8,760	hrs	0.57	0.57	0.21	lbs/hr	None	0%	2.48	2.48	0.93
Baghouse H4-DC1 (Preheater - Kiln 4)	H4-DC1	NF	8,760	hrs	0.60	0.60	0.23	lbs/hr	None	0%	2.63	2.63	0.99
Baghouse H5-DC1, or H5-K4-DC1 (Preheater - Kiln 4)	H5-DC1	NF	8,760	hrs	0.44	0.44	0.17	lbs/hr	None	0%	1.94	1.94	0.73
Baghouse H2-DC1 (Conveyors - Kiln 4)	H2-DC1	NF	8,760	hrs	0.31	0.31	0.13	lbs/hr	None	0%	1.34	1.34	0.59
Baghouse H3-K4-DC1,2 (Coal Analysis - Kiln 4)	H3-K4-DC1,2	NF	8,760	hrs	6.96	6.96	2.48	lbs/hr	None	0%	30.48	30.48	10.88
Baghouse F2-PS-DC2 (Proportional Feed - Kilns 1-3)	F2-PS-DC2	NF	8,760	hrs	0.30	0.30	0.11	lbs/hr	None	0%	1.32	1.32	0.50
Baghouse F2-PS-DC1 (Feed - Kilns 1-3)	F2-PS-DC1	NF	8,760	hrs	0.82	0.82	0.31	lbs/hr	None	0%	3.61	3.61	1.35
Baghouse F2-PS-DC3 (Proportional Feed - Kiln 1)	F2-PS-DC3	NF	8,760	hrs	0.48	0.48	0.18	lbs/hr	None	0%	2.10	2.10	0.79
Baghouse F3-KS-DC1 (Proportional Feed - Kilns 1-3)	F3-KS-DC1	NF	8,760	hrs	0.26	0.26	0.097	lbs/hr	None	0%	1.13	1.13	0.42
Baghouse CM-DC4 (Finish Grinding - CM Area)	CM-DC4	NF	8,760	hrs	4.31	4.31	1.90	lbs/hr	None	0%	18.86	18.86	8.32
Baghouse CM-DC5 (Finish Grinding - CM Area)	CM-DC5	NF	8,760	hrs	6.62	6.62	2.92	lbs/hr	None	0%	29.00	29.00	12.79
Baghouse CM1-DC1 (Finish Grinding - CM Area)	CM1-DC1	NF	8,760	hrs	2.50	2.50	0.89	lbs/hr	None	0%	10.94	10.94	3.90
Baghouse CM2-DC1 (Finish Grinding - CM Area)	CM2-DC1	NF	8,760	hrs	3.55	3.55	1.27	lbs/hr	None	0%	15.56	15.56	5.55
Baghouse CM3-DC1 (Finish Grinding - CM Area)	CM3-DC1	NF	8,760	hrs	6.50	6.50	2.32	lbs/hr	None	0%	28.46	28.46	10.16
Baghouse CM4-DC1 (Finish Grinding - CM Area)	CM4-DC1	NF	8,760	hrs	1.26	1.26	0.45	lbs/hr	None	0%	5.53	5.53	1.97
Baghouse CM5-DC1 (Finish Grinding - CM Area)	CM5-DC1	NF	8,760	hrs	6.50	6.50	2.32	lbs/hr	None	0%	28.46	28.46	10.16
Baghouse CM6-DC1 (Finish Grinding - CM Area)	CM6-DC1	NF	8,760	hrs	6.50	6.50	2.32	lbs/hr	None	0%	28.46	28.46	10.16
Baghouse CM-MA-DC1 (MA-DC) (Finish Grinding - CM Area)	CM-MA-DC1	NF	8,760	hrs	0.34	0.34	0.13	lbs/hr	None	0%	1.50	1.50	0.56
Baghouse CM-DC8 (Finish Grinding - CM Area)	CM-DC8	NF	8,760	hrs	1.28	1.28	0.48	lbs/hr	None	0%	5.61	5.61	2.10
Baghouse CM-DC9 (Finish Grinding - CM Area)	CM-DC9	NF	8,760	hrs	1.62	1.62	0.61	lbs/hr	None	0%	7.10	7.10	2.66
Baghouse CM-DC10 (Finish Grinding - CM Area)	CM-DC10	NF	8,760	hrs	1.62	1.62	0.61	lbs/hr	None	0%	7.10	7.10	2.66
Baghouse CM-DC11 (Finish Grinding - CM Area)	CM-DC11	NF	8,760	hrs	1.12	1.12	0.42	lbs/hr	None	0%	4.92	4.92	1.84
Baghouse CM-DC12 (Finish Grinding - CM Area)	CM-DC12	NF	8,760	hrs	1.62	1.62	0.61	lbs/hr	None	0%	7.10	7.10	2.66
Baghouse PH-DC1 (Cement Packhouse)	PH-DC1	NF	8,760	hrs	1.62	1.62	0.61	lbs/hr	None	0%	7.10	7.10	2.66
Baghouse PH-DC2 (Cement Packhouse)	PH-DC2	NF	8,760	hrs	1.73	1.73	0.65	lbs/hr	None	0%	7.57	7.57	2.84
Baghouse PH-DC3 (Cement Packhouse)	PH-DC3	NF	8,760	hrs	1.17	1.17	0.44	lbs/hr	None	0%	5.13	5.13	1.92
Baghouse PH-DC4 (Cement Packhouse)	PH-DC4	NF	8,760	hrs	0.80	0.80	0.30	lbs/hr	None	0%	3.52	3.52	1.32
Baghouse PH-DC5 (Cement Packhouse)	PH-DC5	NF	8,760	hrs	2.16	2.16	0.81	lbs/hr	None	0%	9.46	9.46	3.55
Baghouse BL-DC1 (Bulk Loading)	BL-DC1	NF	8,760	hrs	0.88	0.88	0.33	lbs/hr	None	0%	3.84	3.84	1.44
Baghouse BL-DC2 (Bulk Loading)	BL-DC2	NF	8,760	hrs	0.78	0.78	0.29	lbs/hr	None	0%	3.43	3.43	1.29
Baghouse BL-DC3 (Bulk Loading)	BL-DC3	NF	8,760	hrs	0.96	0.96	0.36	lbs/hr	None	0%	4.19	4.19	1.57
Baghouse BL-DC4 (Bulk Loading)	BL-DC4	NF	8,760	hrs	1.13	1.13	0.42	lbs/hr	None	0%	4.93	4.93	1.85
Baghouse BL-DC5 (Bulk Loading)	BL-DC5	NF	8,760	hrs	1.21	1.21	0.45	lbs/hr	None	0%	5.29	5.29	1.98
Baghouse BL-DC6 (Bulk Loading)	BL-DC6	NF	8,760	hrs	1.26	1.26	0.47	lbs/hr	None	0%	5.51	5.51	2.07
Baghouse BL-DC7 (Bulk Loading)	BL-DC7	NF	8,760	hrs	0.98	0.98	0.37	lbs/hr	None	0%	4.28	4.28	1.60
Baghouse BL-SB5-DC1 (Bulk Loading)	BL-SB5-DC1	NF	8,760	hrs	1.03	1.03	0.39	lbs/hr	None	0%	4.51	4.51	1.69
Baghouse BL-SB5-DC2 (Bulk Loading)	BL-SB5-DC2	NF	8,760	hrs	0.46	0.46	0.17	lbs/hr	None	0%	2.02	2.02	0.76
Baghouse BL-SB5-DC3 (Bulk Loading)	BL-SB5-DC3	NF	8,760	hrs	0.46	0.46	0.17	lbs/hr	None	0%	2.02	2.02	0.76
Baghouse H5-5-DC1 (Kiln Dust)	H5-5-DC1	NF	8,760	hrs	0.64	0.64	0.24	lbs/hr	None	0%	2.80	2.80	1.05
Baghouse H5-5-DC2 (Dust Bin)	H5-5-DC2	NF	8,760	hrs	0.64	0.64	0.24	lbs/hr	None	0%	2.79	2.79	1.05
Baghouse CM-DC14 (Grinding - CM Area)	CM-DC14	NF	8,760	hrs	1.62	1.62	0.61	lbs/hr	None	0%	7.10	7.10	2.66
Baghouse CM-DC15 (Grinding - CM Area)	CM-DC15	NF	8,760	hrs	1.62	1.62	0.61	lbs/hr	None	0%	7.10	7.10	2.66
Baghouse CM-DC16 (Grinding - CM Area)	CM-DC16	NF	8,760	hrs	1.62	1.62	0.61	lbs/hr	None	0%	7.10	7.10	2.66

Baghouse D3-1-DC1 (Grinding - D3 Mill)	D3-1-DC1	NF	8,760	hrs	5.61	5.61	2.00	lbs/hr	None	0%	24.58	24.58	8.78
Baghouse D3-1-DC2 (Grinding - D3 Mill)	D3-1-DC2	NF	8,760	hrs	40.32	40.32	15.12	lbs/hr	None	0%	176.60	176.60	66.23
Baghouse D3-1-DC3 (Grinding - D3 Mill)	D3-1-DC3	NF	8,760	hrs	4.04	4.04	1.78	lbs/hr	None	0%	17.69	17.69	7.80
Baghouse D2-PC (D2 Mill Product Collector)	D2-PC	NF	8,760	hrs	4.80	4.80	1.71	lbs/hr	None	0%	21.02	21.02	7.51
Baghouse CM7-DC1 (Finish Grinding - CM Area)	CM7-DC1	NF	8,760	hrs	3.67	3.67	1.38	lbs/hr	None	0%	16.08	16.08	6.03
Baghouse CM7-DC2 (Finish Grinding - CM Area)	CM7-DC2	NF	8,760	hrs	2.15	2.15	0.95	lbs/hr	None	0%	9.42	9.42	4.15
Baghouse CM7-DC3 (Finish Grinding - CM Area)	CM7-DC3	NF	8,760	hrs	12.04	12.04	4.30	lbs/hr	None	0%	52.72	52.72	18.82
Baghouse H2-DC3 (Kiln 4 Clinker Bypass)	H2-DC3	NF	100	hrs	0.047	0.047	0.021	lbs/hr	None	0%	0.002	0.002	0.0010
Baghouse H4-K1-DC (Feed - Kiln 1)	H4-K1-DC	NF	8,760	hrs	0.14	0.14	0.051	lbs/hr	None	0%	0.60	0.60	0.23
Baghouse H4-K2-DC (Feed - Kiln 2)	H4-K2-DC	NF	8,760	hrs	0.13	0.13	0.048	lbs/hr	None	0%	0.56	0.56	0.21
Baghouse H4-K3-DC (Feed - Kiln 3)	H4-K3-DC	NF	8,760	hrs	0.48	0.48	0.18	lbs/hr	None	0%	2.10	2.10	0.79
Baghouse H2-KB1-DC (Dust Conveyor - Kilns 1-3)	H2-KB1-DC	NF	8,760	hrs	1.59	1.59	0.70	lbs/hr	None	0%	6.98	6.98	3.08
Baghouse H2-KB3-DC (Kilns 2, 3, 4 Clinker Transfer)	H2-KB3-DC	NF	8,760	hrs	1.03	1.03	0.45	lbs/hr	None	0%	4.51	4.51	1.99
Baghouse H2-DC2 (Clinker Storage)	H2-DC2	NF	8,760	hrs	0.458	0.458	0.2018	lbs/hr	None	0%	2.00	2.00	0.88
Baghouse H5-GB (Kiln 4 Stack)	H5-GB	NF	8,760	hrs	13.00	13.00	9.31	lbs/hr	None	0%	56.93	56.93	40.76
Baghouse H2-GB (Clinker Cooler - Kiln 4)	H2-GB	NF	8,760	hrs	34.16	34.16	15.06	lbs/hr	None	0%	149.60	149.60	65.97
Baghouse H5-5-GB (Kilns 1-3 Stack)	H5-5-GB	NF	8,760	hrs	9.85	9.85	8.77	lbs/hr	None	0%	43.15	43.15	38.40
Baghouse H2-1-DC (Clinker Cooler - Kiln 1)	H2-1-DC	NF	8,760	hrs	3.00	3.00	1.32	lbs/hr	None	0%	13.16	13.16	5.80
Baghouse H2-2-DC (Clinker Cooler - Kiln 2)	H2-2-DC	NF	8,760	hrs	3.00	3.00	1.32	lbs/hr	None	0%	13.16	13.16	5.80
Baghouse H2-3-DC (Clinker Cooler - Kiln 3)	H2-3-DC	NF	8,760	hrs	3.00	3.00	1.32	lbs/hr	None	0%	13.16	13.16	5.80
Baghouse D4-DC2 (Raw Material Transfer)	D4-DC2	NF	8,760	hrs	0.37	0.37	0.16	lbs/hr	None	0%	1.63	1.63	0.72
Baghouse D4-DC1 (Raw Material Transfer)	D4-DC1	NF	8,760	hrs	0.22	0.22	0.096	lbs/hr	None	0%	0.96	0.96	0.42
Baghouse F2-DC4 (Raw Material Transfer / Weighing)	F2-DC4	NF	8,760	hrs	0.031	0.031	0.012	lbs/hr	None	0%	0.13	0.13	0.05
Baghouse AC-DC1 (Raw Material Transfer / Weighing)	AC-DC1	NF	8,760	hrs	0.17	0.17	0.063	lbs/hr	None	0%	0.73	0.73	0.27
Baghouse CM-DC17 (Cement Transfer)	CM-DC17	NF	8,760	hrs	0.17	0.17	0.063	lbs/hr	None	0%	0.73	0.73	0.27
Baghouse D2-DC4 (Cement Transfer)	D2-DC4	NF	8,760	hrs	0.065	0.065	0.024	lbs/hr	None	0%	0.28	0.28	0.11
Dust Collector B11-DC1 (controlling Belt Conveyor B11-BC1 to Belt Conveyor B11-BC2)	B11-DC1	NF	8,760	hrs	0.63	0.63	0.28	lbs/hr	None	0%	2.76	2.76	1.22
Dust Collector (B2-DC2)	B2-DC2	NF	8,760	hours	0.17	0.17	0.076	lbs/hr	BOP	0%	0.75	0.75	0.33
Dust Collector (B2-DC3)	B2-DC3	NF	8,760	hours	0.51	0.51	0.23	lbs/hr	BOP	0%	2.25	2.25	0.99
Alternate Fuel Handling System Baghouse 1	ALT-DC1	NF	8,760	hrs	0.20	0.19	0.17	lbs/hr	None	0%	0.90	0.82	0.73
Alternate Fuel Handling System Baghouse 2	ALT-DC2	NF	8,760	hrs	0.20	0.19	0.17	lbs/hr	None	0%	0.90	0.82	0.73
Alternate Fuel Handling System Baghouse 3	ALT-DC3	NF	8,760	hrs	0.20	0.19	0.17	lbs/hr	None	0%	0.90	0.82	0.73
Alternate Fuel Handling System Baghouse 4	ALT-DC4	NF	8,760	hrs	0.20	0.19	0.17	lbs/hr	None	0%	0.90	0.82	0.73
Alternate Fuel Handling System Baghouse 5	ALT-DC5	NF	8,760	hrs	0.20	0.19	0.17	lbs/hr	None	0%	0.90	0.82	0.73
Dust Collector B2-DC4	B2-DC4	NF	8,760	hrs	0.20	0.20	0.09	lbs/hr	None	0%	0.86	0.86	0.38
Dust Collector H2-DC4	H2-DC4	NF	8,760	hrs	0.13	0.12	0.05	lbs/hr	None	0%	0.59	0.54	0.24
Unpaved Vehicle Travel Emissions - Quarry and Cement Plant													
Import/Export Truck- Iron Source to Plant Stockpile - Truck	IMP-UP-1	F	5,962	VMTs	7.15	1.93	0.19	lbs/VMT	Unpaved	65%	7.46	2.01	0.20
Haul Truck- Iron Source to Plant Stockpile - Rail	IMP-UP-2	F	1,753	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	4.15	1.12	0.11
Haul Truck- Bauxite / Alumina Source to Plant Stockpile - Rail	IMP-UP-3	F	1,917	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	4.54	1.22	0.12
Import/Export Truck- Gypsum - Import to Stockpile - Truck	IMP-UP-4	F	6,618	VMTs	7.15	1.93	0.19	lbs/VMT	Unpaved	65%	8.28	2.23	0.22
Import/Export Truck- Mineral Filler - Flyash to Plant Bins - Truck	IMP-UP-5	F	385	VMTs	7.15	1.93	0.19	lbs/VMT	Unpaved	65%	0.48	0.13	0.01
Import/Export Truck- Mineral Filler - Hydrated Lime to Plant Bins - Truck	IMP-UP-6	F	196	VMTs	7.15	1.93	0.19	lbs/VMT	Unpaved	65%	0.25	0.07	0.01
Haul Truck- Coal to Plant Stockpile - Rail	IMP-UP-7	F	2,381	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	5.64	1.52	0.15
Haul Truck- Coke / Pet Coke to Plant - Rail	IMP-UP-8	F	447	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	1.06	0.29	0.03
Import/Export Truck- Grinding Aid	IMP-UP-9	F	1.71	VMTs	7.15	1.93	0.19	lbs/VMT	Unpaved	65%	0.00	0.00	0.00
Import/Export Truck- Grinding Aid	IMP-UP-10	F	1.71	VMTs	7.15	1.93	0.19	lbs/VMT	Unpaved	65%	0.00	0.00	0.00
Import/Export Truck- REAX	IMP-UP-11	F	2.11	VMTs	7.15	1.93	0.19	lbs/VMT	Unpaved	65%	0.00	0.00	0.00
Import/Export Truck- Tire/Rubber Chips	IMP-UP-12	F	6,322	VMTs	7.15	1.93	0.19	lbs/VMT	Unpaved	65%	7.91	2.13	0.21
Import/Export Truck- Wood Chips/Pecan Shells	IMP-UP-13	F	7,669	VMTs	7.15	1.93	0.19	lbs/VMT	Unpaved	65%	9.59	2.59	0.26
Haul Truck- Iron from Quarry Stockpile to Plant - Truck	IMQ-UP-1	F	369	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.87	0.24	0.02
Haul Truck- Bauxite / Alumina from Quarry Stockpile to Plant - Truck	IMQ-UP-2	F	5,877	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	13.91	3.75	0.38
Import/Export Truck- Imported High-Grade Limestone to Quarry - Truck	IMQ-UP-3	F	8,346	VMTs	7.15	1.93	0.19	lbs/VMT	Unpaved	65%	10.44	2.82	0.28
Haul Truck- 1" H.G. Limestone from Quarry to Plant - Truck	IMQ-UP-4	F	1,868	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	4.42	1.19	0.12
Haul Truck- Low-Grade Limestone to Stockpile	PMP-UP-1	F	1,208	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	2.86	0.77	0.08
Front-End Loader- Low-Grade Limestone to D4 Hopper	PMP-UP-2	F	2,183	VMTs	12.07	3.26	0.33	lbs/VMT	Unpaved	65%	4.61	1.25	0.12
Haul Truck- Quarry H.G. Limestone from S/R Bldg. to D4 Stockpile	PMP-UP-3	F	992	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	2.35	0.63	0.06
Front-End Loader- Quarry H.G. Limestone from Stockpile to D4 Hopper	PMP-UP-4	F	1,716	VMTs	12.07	3.26	0.33	lbs/VMT	Unpaved	65%	3.62	0.98	0.10
Import/Export Truck- Imported H.G. Limestone from Source to D3 Stockpile	PMP-UP-5	F	3,714	VMTs	7.15	1.93	0.19	lbs/VMT	Unpaved	65%	4.64	1.25	0.13

Front-End Loader- Imported H.G. Limestone from Stockpile to D3 Working Stockpile	PMP-UP-6	F	5,552	VMTs	12.07	3.26	0.33	lbs/VMT	Unpaved	65%	11.73	3.17	0.32
Front-End Loader- Imported H.G. Limestone from D3 Working Stockpile to D3 Hopper	PMP-UP-7	F	397	VMTs	8.15	2.20	0.22	lbs/VMT	Unpaved	65%	0.57	0.15	0.02
Import/Export Truck- Imported H.G. Limestone from Source to Crusher 1 Stockpile	PMP-UP-8	F	7,673	VMTs	7.15	1.93	0.19	lbs/VMT	Unpaved	65%	9.60	2.59	0.26
Front-End Loader- Imported H.G. Limestone from Stockpile to Crusher 1	PMP-UP-9	F	3,730	VMTs	12.07	3.26	0.33	lbs/VMT	Unpaved	65%	7.88	2.13	0.21
Front-End Loader- Bauxite / Alumina at Plant (wet conditions)	PMP-UP-10	F	660	VMTs	11.99	3.24	0.32	lbs/VMT	Unpaved	65%	1.39	0.37	0.04
Front-End Loader- Bauxite / Alumina at Plant (wet conditions)	PMP-UP-11	F	660	VMTs	11.99	3.24	0.32	lbs/VMT	Unpaved	65%	1.39	0.37	0.04
Front-End Loader- Bauxite / Alumina at Plant (dry)	PMP-UP-12	F	229	VMTs	11.99	3.24	0.32	lbs/VMT	Unpaved	65%	0.48	0.13	0.01
Front-End Loader- Iron Source at Plant	PMP-UP-13	F	120	VMTs	12.33	3.33	0.33	lbs/VMT	Unpaved	65%	0.26	0.07	0.01
Front-End Loader- Gypsum to Crusher 1 Hopper	PMP-UP-14	F	64	VMTs	12.07	3.26	0.33	lbs/VMT	Unpaved	65%	0.13	0.04	0.00
Haul Truck- Coal Mill Rejects	PMP-UP-15	F	23	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.05	0.01	0.00
Coal/Coke Reclaim Loader- Coal Reclaim (Percentage of Coal Processed)	PMP-UP-16	F	79	VMTs	11.97	3.23	0.32	lbs/VMT	Unpaved	65%	0.17	0.04	0.00
Coal/Coke Reclaim Loader- Coke Reclaim	PMP-UP-17	F	341	VMTs	7.19	1.94	0.19	lbs/VMT	Unpaved	65%	0.43	0.12	0.01
Haul Truck- Horseshoe to Inert Material Storage	PMP-UP-18	F	542	VMTs	13.39	3.61	0.36	lbs/VMT	Unpaved	65%	1.27	0.34	0.03
Dump Truck (Horseshoe)- Plant to Horseshoe	PMP-UP-19	F	1,152	VMTs	5.44	1.47	0.15	lbs/VMT	Unpaved	65%	1.10	0.30	0.03
Front-End Loader- D4 Material Bypass	PMP-UP-20	F	382	VMTs	11.94	3.22	0.32	lbs/VMT	Unpaved	65%	0.80	0.22	0.02
Forklift Dump- C2 Metal Rejects	PMP-UP-21	F	3,262	VMTs	3.86	1.04	0.10	lbs/VMT	Unpaved	65%	2.20	0.60	0.06
Front-End Loader- Clinker to Stockpile	PMP-UP-22	F	40	VMTs	12.18	3.29	0.33	lbs/VMT	Unpaved	65%	0.09	0.02	0.00
Front-End Loader- Clinker to Reclaim	PMP-UP-23	F	40	VMTs	12.18	3.29	0.33	lbs/VMT	Unpaved	65%	0.09	0.02	0.00
Dump Truck- Clinker Conveyor Bypass	PMP-UP-24	F	96	VMTs	5.44	1.47	0.15	lbs/VMT	Unpaved	65%	0.09	0.02	0.00
Haul Truck- Clinker from Plant to Quarry Crusher	PMP-UP-25	F	390	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.92	0.25	0.02
Haul Truck- Kiln Brick	PMP-UP-26	F	377	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.89	0.24	0.02
Import/Export Truck- Pantano Clay (Alumina) to Quarry	PMP-UP-27	F	168	VMTs	7.15	1.93	0.19	lbs/VMT	Unpaved	65%	0.21	0.06	0.01
Haul Truck- Pantano Clay (Alumina) at Quarry	PMP-UP-28	F	45	VMTs	13.39	3.61	0.36	lbs/VMT	Unpaved	65%	0.11	0.03	0.00
Haul Truck- Waste Rock/Overburden to 111 (Aggregate Dump)	PMQ-UP-1	F	134	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.32	0.09	0.01
Haul Truck- Waste Rock/Overburden to 112 (Lower/Upper Ashton Dump)	PMQ-UP-2	F	161	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.38	0.10	0.01
Haul Truck- Waste Rock/Overburden to 119 (South Crusher Dump)	PMQ-UP-3	F	161	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.38	0.10	0.01
Haul Truck- Waste Rock/Overburden to 108 (North Crusher Dump)	PMQ-UP-4	F	161	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.38	0.10	0.01
Haul Truck- Rock Processed at Quarry	PMQ-UP-5	F	79	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.19	0.05	0.01
Haul Truck- Low-Grade Limestone at Quarry	PMQ-UP-6	F	81	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.19	0.05	0.01
Haul Truck- Quarry H.G. Limestone to Quarry Crusher	PMQ-UP-7	F	77	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.18	0.05	0.00
Haul Truck- Imported H.G. Limestone to Quarry Crusher	PMQ-UP-8	F	110	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.26	0.07	0.01
Haul Truck- Bauxite / Alumina at Quarry	PMQ-UP-9	F	111	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.26	0.07	0.01
Haul Truck- Magnetite (Iron) Stockpile to Face	PMQ-UP-10	F	108	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.26	0.07	0.01
Haul Truck- Magnetite (Iron) Face to Crusher	PMQ-UP-11	F	81	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.19	0.05	0.01
Haul Truck- AB, 3/8+ Twin Peaks to Plant	PMQ-UP-12	F	311	VMTs	13.53	3.65	0.37	lbs/VMT	Unpaved	65%	0.74	0.20	0.02
Fines Screening Process Loader Travel at the Quarry Crusher System	PMQ-UP-13	F	811	VMTs	14.25	3.85	0.38	lbs/VMT	Unpaved	65%	2.02	0.55	0.05
Heavy Duty Truck- Blasting materials	NM-UP-1	F	385	VMTs	5.44	1.47	0.15	lbs/VMT	Unpaved	65%	0.37	0.10	0.01
Light Duty Truck- Blasting materials	NM-UP-2	F	3,442	VMTs	2.83	0.76	0.08	lbs/VMT	Unpaved	65%	1.70	0.46	0.05
Water truck (small)- Small Water Trucks	NM-UP-3	F	8,414	VMTs	8.51	2.30	0.23	lbs/VMT	Unpaved	65%	12.52	3.38	0.34
Water truck (large)- Large Water Trucks	NM-UP-4	F	8,414	VMTs	12.09	3.26	0.33	lbs/VMT	Unpaved	65%	17.81	4.81	0.48
Light duty autos/pick-up trucks at Plant- N/A	NM-UP-5	F	8,414	VMTs	12.09	3.26	0.33	lbs/VMT	Unpaved	65%	17.81	4.81	0.48
Paved Vehicle Travel Emissions - Quarry and Cement Plant													
Import/Export Truck- Iron Source to Plant Stockpile - Truck	IM-PV-1	F	1,658	VMTs	1.92	0.38	0.09	lbs/VMT	None	0%	1.59	0.32	0.08
Import/Export Truck- Gypsum - Import to Stockpile - Truck	IM-PV-2	F	3,280	VMTs	1.92	0.38	0.09	lbs/VMT	None	0%	3.14	0.63	0.15
Import/Export Truck- Mineral Filler - Flyash to Plant Bins - Truck	IM-PV-3	F	357	VMTs	1.92	0.38	0.09	lbs/VMT	None	0%	0.34	0.07	0.02
Import/Export Truck- Mineral Filler - Hydrated Lime to Plant Bins - Truck	IM-PV-4	F	182	VMTs	1.92	0.38	0.09	lbs/VMT	None	0%	0.17	0.03	0.01
Import/Export Truck- Grinding Aid 1	IM-PV-5	F	5	VMTs	1.92	0.38	0.09	lbs/VMT	None	0%	0.00	0.00	0.00
Import/Export Truck- Grinding Aid 2	IM-PV-6	F	3	VMTs	1.92	0.38	0.09	lbs/VMT	None	0%	0.00	0.00	0.00
Import/Export Truck- REAX	IM-PV-7	F	6	VMTs	1.92	0.38	0.09	lbs/VMT	None	0%	0.01	0.00	0.00
Import/Export Truck- Tire/Rubber Chips	IM-PV-8	F	1,289	VMTs	1.92	0.38	0.09	lbs/VMT	None	0%	1.23	0.25	0.06
Front-End Loader- Tire/Rubber Chips	IM-PV-9	F	3,393	VMTs	5.87	1.17	0.29	lbs/VMT	None	0%	9.97	1.99	0.49
Import/Export Truck- Wood Chips/Pecan Shells	IM-PV-10	F	1,563	VMTs	1.92	0.38	0.09	lbs/VMT	None	0%	1.50	0.30	0.07
Front-End Loader- Wood Chips/Pecan Shells	IM-PV-11	F	2,287	VMTs	5.96	1.19	0.29	lbs/VMT	None	0%	6.82	1.36	0.33
Import/Export Truck- Used Oil	IM-PV-12	F	90	VMTs	1.92	0.38	0.09	lbs/VMT	None	0%	0.09	0.02	0.00
Haul Truck- Iron from Quarry Stockpile to Plant - Truck	IMQ-PV-1	F	222	VMTs	8.13	1.63	0.40	lbs/VMT	None	0%	0.90	0.18	0.04
Haul Truck- Bauxite / Alumina from Quarry Stockpile to Plant - Truck	IMQ-PV-2	F	3,485	VMTs	8.13	1.63	0.40	lbs/VMT	None	0%	14.17	2.83	0.70
Import/Export Truck- Imported High-Grade Limestone to Quarry - Truck	IMQ-PV-3	F	30,081	VMTs	1.92	0.38	0.09	lbs/VMT	None	0%	28.81	5.76	1.41
Haul Truck- 1" H.G. Limestone from Quarry to Plant - Truck	IMQ-PV-4	F	1,224	VMTs	8.13	1.63	0.40	lbs/VMT	None	0%	4.98	1.00	0.24
Haul Truck- Coal Mill Rejects	PMP-PV-1	F	6	VMTs	8.13	1.63	0.40	lbs/VMT	None	0%	0.02	0.00	0.00
Haul Truck- Horseshoe to Inert Material Storage	PMP-PV-2	F	260	VMTs	7.95	1.59	0.39	lbs/VMT	None	0%	1.03	0.21	0.05
Dump Truck (Horseshoe)- Plant to Horseshoe	PMP-PV-3	F	752	VMTs	1.03	0.21	0.05	lbs/VMT	None	0%	0.39	0.08	0.02
Forklift Dump- C2 Metal Rejects	PMP-PV-4	F	19	VMTs	0.47	0.09	0.02	lbs/VMT	None	0%	0.00	0.00	0.00
Dump Truck- Clinker Conveyor Bypass	PMP-PV-5	F	250	VMTs	1.03	0.21	0.05	lbs/VMT	None	0%	0.13	0.03	0.01
Haul Truck- Clinker from Plant to Quarry Crusher	PMP-PV-6	F	41	VMTs	8.13	1.63	0.40	lbs/VMT	None	0%	0.17	0.03	0.01
Front-End Loader- Kiln Brick	PMP-PV-7	F	26	VMTs	2.49	0.50	0.12	lbs/VMT	None	0%	0.03	0.01	0.00
Haul Truck- Kiln Brick	PMP-PV-8	F	37	VMTs	8.13	1.63	0.40	lbs/VMT	None	0%	0.15	0.03	0.01
Import/Export Truck- Pantano Clay (Alumina) to Quarry	PMP-PV-9	F	4,051	VMTs	1.92	0.38	0.09	lbs/VMT	None	0%	3.88	0.78	0.19
Cement Export Truck- Cement Exports - Bulk Truck	PMP-PV-10	F	94,826	VMTs	1.84	0.37	0.09	lbs/VMT	None	0%	87.45	17.49	4.29
AB, 3/8+ Twin Peaks to Plant	PMQ-PV-1	F	204	VMTs	8.13	1.63	0.40	lbs/VMT	None	0%	0.83	0.17	0.04
Coal Crushing													
Coal Crushing	CoalCrush	NF	346,737	tons	0.11	0.055	0.0083	lbs/ton	None	0%	19.07	9.54	1.43
Fuel Burning Equipment													
T1-MG1 - Diesel Emergency Generator	DieselGen	NF	125,000	hp-hrs	0.0022	0.0022	0.0022	lbs/hp-hr	None	0%	0.14	0.14	0.14
H3-K-MG - Natural Gas Motor Generator	NGGen	NF	67,000	hp-hrs	0.00020	0.00020	0.00020	lbs/hp-hr	None	0%	0.007	0.007	0.007
H3-K4-AUX - Natural Gas Auxiliary Engine	NGGen	NF	35,000	hp-hrs	0.00020	0.00020	0.00020	lbs/hp-hr	None	0%	0.004	0.004	0.004
Natural Gas Engine Driven Generator (675 hp Engine)	NGGen	NF	337,500	hp-hrs	0.00020	0.00020	0.00020	lbs/hp-hr	None	0%	0.03	0.03	0.03
Bunker C Boiler	NatGas	NF	53.9	MMscf	7.60	7.60	7.60	lbs/MMscf	None	0%	0.20	0.20	0.20
Heating Boiler	NatGas	NF	7.09	MMscf	7.60	7.60	7.60	lbs/MMscf	None	0%	0.03	0.03	0.03
D4-RM1-HTR	NatGas	NF	644	MMscf	7.60	7.60	7.60	lbs/MMscf	None	0%	2.45	2.45	2.45
Separator heaters (AC Mills) - 4 Heaters Total	NatGas	NF	68.7	MMscf	7.60	7.60	7.60	lbs/MMscf	None	0%	0.26	0.26	0.26
Direct-Fired Heaters - 2 Heaters Total	NatGas	NF	34.4	MMscf	7.60	7.60	7.60	lbs/MMscf	None	0%	0.13	0.13	0.13
Elevator Heaters (AC Mills) - 4 Heaters Total	NatGas	NF	17.2	MMscf	7.60	7.60	7.60	lbs/MMscf	None	0%	0.07	0.07	0.07
Comfort Heating - Various Water Heaters, Unit Heaters, Radiant Heaters, Office Heaters, and Furnaces	NatGas	NF	19.38	MMscf	7.60	7.60	7.60	lbs/MMscf	None	0%	0.07	0.07	0.07
Tier 4 Diesel Engine (kW > 560)	AGG-Gen	NF	13,140,000.00	hp-hr	0.00005	0.00005	0.00005	lb/hp-hr	BOP	0%	0.32	0.32	0.32
										Sum of Non-Fugitive Emissions	**1,640.87**	**1,418.42**	**558.50**
										Sum of Fugitive Emissions	**721.24**	**256.21**	**40.07**
										Total Emissions	**2,362.11**	**1,674.63**	**598.56**

Table 11a. Facility Gaseous Pollutant Emission Factors -

Process Code	Process Description	Emission Factor								Production Rate Units	Reference
		CO	NO_x	SO_2	VOC	CO_2	CH_4	N_2O	Units		
Mining Operations											
Blasting	Blasting	67	17	2	0	566	0.023	0.0046	lbs/ton ANFO	tons ANFO	AP-42 Table 13.3-1 (02/80), 40 CFR 98, Tables C-1 and C-2, assuming a fuel oil to ammonium nitrate ratio of 9.0%, and 19,300 Btu/lb diesel.
Kilns											
KilnCO	CO Emissions from Kilns 1, 2, 3, and 4	1,157	0	0	0	0	0	0	lbs/hr	hrs	Based on CO permit limit of 5,069 tons per year for all four kilns combined. Assumed 8,760 hours per year of kiln operation.
KilnNO_X	NO_X Emissions from Kilns 1, 2, 3, and 4	0	1,174	0	0	0	0	0	lbs/hr	hrs	Based on NOx permit limit of 5,144 tons per year for all four kilns combined. Assumed 8,760 hours per year of kiln operation.
Kiln1-3SO_2	SO_2 Emissions from Kilns 1, 2, and 3	0	0	9.49	0	0	0	0	lbs/ton clinker	tons clinker	Based on Kiln 4 permit limit of 6 pounds of SO2 per ton of kiln feed. The kiln feed to clinker ratio for Kilns 1, 2, and 3 is estimated at 1.58:1 (or 0.63239 tons clinker per ton of kiln feed).
Kiln4SO_2	SO_2 Emissions from Kiln 4	0	0	9.90	0	0	0	0	lbs/ton clinker	tons clinker	Based on Kiln 4 permit limit of 6 pounds of SO2 per ton of kiln feed. The kiln feed to clinker ratio for Kiln 4 is 1.65:1 (or 0.606 tons clinker per ton of kiln feed).
KilnVOC	VOC Emissions from Kilns 1, 2, 3, and 4	0	0	0	0.01	0	0	0	lbs/ton clinker	tons clinker	VOC Emissions based on 1991 source test of Kiln 4. The average VOC emission factor was calculated from the VOC results of all fuels tested during the source test. Fuel #1: 100% Coal; Fuel #3: 34% Shredded Tires, 66% Coal; Fuel #4: 41% On-Spec Used Oil, 59% Coal; Fuel #6: 22% Wood Chips and 78% Coal.
Kiln1GHG	GHG Emissions from Kiln 1	0	0	0	0	6,350	0.65	0.094	lbs/hr	hrs	Assumed fuel mixture of 40% Coke and 60% Coal. Assumed maximum hourly firing rate of 130 MMBtu/hour. Default high heat value and CO_2 emission factors for Coke and Coal from 40 CFR 98, Subpart C, Table C-1 for Anthracite Coal and Coal Coke. CH_4 and N_2O emission factors from 40 CFR 98, Subpart C, Table C-2 for Coal and Coke.
Kiln2GHG	GHG Emissions from Kiln 2	0	0	0	0	6,350	0.65	0.094	lbs/hr	hrs	Assumed fuel mixture of 40% Coke and 60% Coal. Assumed maximum hourly firing rate of 130 MMBtu/hour. Default high heat value and CO_2 emission factors for Coke and Coal from 40 CFR 98, Subpart C, Table C-1 for Anthracite Coal and Coal Coke. CH_4 and N_2O emission factors from 40 CFR 98, Subpart C, Table C-2 for Coal and Coke.
Kiln3GHG	GHG Emissions from Kiln 3	0	0	0	0	6,350	0.65	0.094	lbs/hr	hrs	Assumed fuel mixture of 40% Coke and 60% Coal. Assumed maximum hourly firing rate of 130 MMBtu/hour. Default high heat value and CO_2 emission factors for Coke and Coal from 40 CFR 98, Subpart C, Table C-1 for Anthracite Coal and Coal Coke. CH_4 and N_2O emission factors from 40 CFR 98, Subpart C, Table C-2 for Coal and Coke.
Kiln4GHG	GHG Emissions from Kiln 4	0	0	0	0	24,645	2.58	0.38	lbs/hr	hrs	Assumed fuel mixture of 12% Coke and 88% Coal. Assumed maximum hourly firing rate of 518 MMBtu/hour. Default high heat value and CO_2 emission factors for Coke and Coal from 40 CFR 98, Subpart C, Table C-1 for Anthracite Coal and Coal Coke. CH_4 and N_2O emission factors from 40 CFR 98, Subpart C, Table C-2 for Coal and Coke.
Fuel Burning Equipment											
DieselGen	Diesel Fuel Engine Driven Generator <600 HP	0.0067	0.031	0.000011	0.0025	1.14	0.000046	0.0000093	lbs/hp-hr	hp-hrs	Emission Factors obtained from AP-42 Table 3.3-1 for diesel-fired engines <600 hp. The SOX emission factor was derived using a sulfur content of 0.05%, a brake-specific fuel consumption of 7000 Btu/hp-hr, and an energy density of 19,300 Btu/lb. GHG emission factors from 40 CFR 98, Subpart C, Tables C-1 and C-2.
NatGas	Natural Gas Combustion (< 10 MMBtu/hr)	84	100	0.6	5.5	119,317	2.25	0.22	lbs/MMscf	MMscf	AP-42, Section 1.4, Tables 1.4-1 and 1.4-2 (07/98), 40 CFR 98, Subpart C, Tables C-1 and C-2, and EPA WebFIRE.
NGGen	Natural Gas Engine Driven Generator	0.039	0.043	0.0000062	0.0012	1.23	0.000023	0.0000023	lbs/hp-hr	hp-hrs	NO_X , SO_2, and VOC emission factors obtained from AP-42, Section 3.2, Table 3.2-2 for 4-Stroke Lean Burn Engines (07/00). CO emission factor obtained from AP-42, Section 3.2, Table 3.2-3 for 4-Stroke Rich Burn Engines (07/00). GHG emission factors obtained from 40 CFR 98, Subpart C, Tables C-1 and C-2 for natural gas. A brake-specific fuel consumption of 10,500 Btu/hp-hr was assumed.
AGG-Gen	AGG-Gen	0.0058	0.0011	0.000011	0.0003	1.14	0.000046	0.0000093	lb/hp-hr	hp-hr	Tier 4 Emission Standards from 40 CFR 1039 Table 1 for Engines Rated > 560 kW, Complete Sulfur Conversion Using a Diesel Sulfur Content of 15 ppm, 40 CFR 98 Tables C-1 and C-2, 7,000 Btu/hp-hr, and 19,300 Btu/lb diesel
Storage Tanks											
DieselAST12K	12,000-gallon Aboveground Storage Tank at Plant - Diesel Fuel	0	0	0	0.00084	0	0	0	lbs/hr	hrs	Emission factor obtained from EPA TANKS Version 4.0.9d output. Assumed continuous operation and 10 tank turnovers per year.
DieselAST50K	50,000-gallon Aboveground Storage Tank at Quarry - Diesel Fuel	0	0	0	0.0034	0	0	0	lbs/hr	hrs	Emission factor obtained from EPA TANKS Version 4.0.9d output. Assumed continuous operation and 10 tank turnovers per year.
GasAST2000	2,000-gallon Aboveground Storage Tank - Gasoline	0	0	0	0.12	0	0	0	lbs/hr	hrs	Emission factor obtained from EPA TANKS Version 4.0.9d output. Assumed continuous operation and 10 tank turnovers per year.
LubeAST1000	1,000-gallon Aboveground Storage Tank - Lube Oil	0	0	0	0.00000070	0	0	0	lbs/hr	hrs	Emission factor obtained from EPA TANKS Version 4.0.9d output. Assumed continuous operation and 10 tank turnovers per year.
OilAST2000	2,000-gallon Aboveground Storage Tank - Used Oil	0	0	0	0.0000014	0	0	0	lbs/hr	hrs	Emission factor obtained from EPA TANKS Version 4.0.9d output. Assumed continuous operation and 10 tank turnovers per year.
OSUAAST28K	28,000-gallon Aboveground Storage Tank - On-Spec Used Oil	0	0	0	0.000018	0	0	0	lbs/hr	hrs	Emission factor obtained from EPA TANKS Version 4.0.9d output. Assumed continuous operation and 10 tank turnovers per year.
OSUOAST31K	31,000-gallon Aboveground Storage Tank - On-Spec Used Oil	0	0	0	0.000021	0	0	0	lbs/hr	hrs	Emission factor obtained from EPA TANKS Version 4.0.9d output. Assumed continuous operation and 10 tank turnovers per year.

Table 12a. Facility Annual Gaseous Emissions - PTE Calculations

Unit Description	Process Code	Non-Fug. (NF) / Fug. (F)	Annual Production Rate	Rate Units	Emission Factors							EF Units	Emissions (tpy)						
					CO	NO_x	SO_2	VOC	CO_2	CH_4	N_2O		CO	NO_x	SO_2	VOC	CO_2	CH_4	N_2O
Mining Operations																			
Blasting	Blasting	F	1,552	tons ANFO	67	17	2	0	566	0.023	0.0046	lbs/ton ANFO	51.99	13.19	1.55	0	440	0.018	0.0036
Kilns																			
Kiln NOx Emissions (Kilns 1, 2, 3, and 4)	KilnNOx	NF	8,760	hrs	0	1,174	0	0	0	0	0	lbs/hr	0	5,144	0	0	0	0	0
Kiln CO Emissions (Kilns 1, 2, 3, and 4)	KilnCO	NF	8,760	hrs	1,157	0	0	0	0	0	0	lbs/hr	5,069.00	0	0	0	0	0	0
Kiln 1 - Other Gaseous Emissions	Kiln1-3SO_2	NF	166,440	tons clinker	0	0	9.49	0	0	0	0	lbs/ton clinker	0.0	0	790	0	0	0	0
	KilnVOC	NF	166,440	tons clinker	0	0	0	0.01	0	0	0	lbs/ton clinker	0.0	0	0	0.83	0	0	0
	Kiln1GHG	NF	8,760	hrs	0	0	0	0	6,350	0.65	0.094	lbs/hr	0.0	0	0	0	27,812	2.84	0.41
Kiln 2 - Other Gaseous Emissions	Kiln1-3SO_2	NF	166,440	tons clinker	0	0	9.49	0	0	0	0	lbs/ton clinker	0.0	0	790	0	0	0	0
	KilnVOC	NF	166,440	tons clinker	0	0	0	0.01	0	0	0	lbs/ton clinker	0.0	0	0	0.83	0	0	0
	Kiln2GHG	NF	8,760	hrs	0	0	0	0	6,350	0.65	0.094	lbs/hr	0.0	0	0	0	27,812	2.84	0.41
Kiln 3 - Other Gaseous Emissions	Kiln1-3SO_2	NF	166,440	tons clinker	0	0	9.49	0	0	0	0	lbs/ton clinker	0.0	0	790	0	0	0	0
	KilnVOC	NF	166,440	tons clinker	0	0	0	0.01	0	0	0	lbs/ton clinker	0.0	0	0	0.83	0	0	0
	Kiln3GHG	NF	8,760	hrs	0	0	0	0	6,350	0.65	0.094	lbs/hr	0.0	0	0	0	27,812	2.84	0.41
Kiln 4 - Other Gaseous Emissions	Kiln4SO_2	NF	1,813,320	tons clinker	0	0	9.90	0	0	0	0	lbs/ton clinker	0.0	0	8,977	0	0	0	0
	KilnVOC	NF	1,813,320	tons clinker	0	0	0	0.01	0	0	0	lbs/ton clinker	0.0	0	0	9.07	0	0	0
	Kiln4GHG	NF	8,760	hrs	0	0	0	0	24,645	2.58	0.38	lbs/hr	0.0	0	0	0	107,943	11.32	1.65
Fuel Burning Equipment																			
T1-MG1 - Diesel Emergency Generator	DieselGen	NF	125,000	hp-hrs	0.0067	0.031	0.0000	0.00251	1.14	0.000046	0.000009	lbs/hp-hr	0.42	1.94	0.00	0.16	71.32	0.003	0.001
H3-K-MG - Natural Gas Motor Generator	NGGen	NF	67,000	hp-hrs	0.039	0.043	0.000006	0.00124	1.23	0.000023	0.000002	lbs/hp-hr	1.31	1.44	0.0002	0.04	41.15	0.001	0.0001
H3-K4-AUX - Natural Gas Auxiliary Engine	NGGen	NF	35,000	hp-hrs	0.039	0.043	0.000006	0.00124	1.23	0.000023	0.000002	lbs/hp-hr	0.68	0.75	0.00011	0.02	21.49	0.0004	0.00004
Natural Gas Engine Driven Generator (675 hp Engine)	NGGen	NF	337,500	hp-hrs	0.039	0.043	0.000006	0.00124	1.23	0.000023	0.000002	lbs/hp-hr	6.59	7.23	0.0010	0.21	207.27	0.004	0.0004
AGG-Gen	AGG-Gen	NF	13,140,000	hp-hr	0.0058	0.0011	0.000011	0.00031	1.14	0.000046	0.0000093	lb/hp-hr	37.80	7.24	0.07	2.05	7,499	0.30	0.06
Bunker C Boiler	NatGas	NF	53.9	MMscf	84	100	0.6	5.5	119,317	2.25	0.22	lbs/MMscf	2.26	2.69	0.02	0.15	3,215	0.06	0.006
Heating Boiler	NatGas	NF	7.1	MMscf	84	100	0.6	5.5	119,317	2.25	0.22	lbs/MMscf	0.30	0.35	0.002	0.02	422.70	0.008	0.001
D4-RM1-HTR	NatGas	NF	644.1	MMscf	84	100	0.6	5.5	119,317	2.25	0.22	lbs/MMscf	27.05	32.21	0.19	1.77	38,427	0.72	0.07
Separator heaters (AC Mills) - 4 Heaters Total	NatGas	NF	68.7	MMscf	84	100	0.6	5.5	119,317	2.25	0.22	lbs/MMscf	2.89	3.44	0.02	0.19	4,099	0.08	0.008
Direct-Fired Heaters - 2 Heaters Total	NatGas	NF	34.4	MMscf	84	100	0.6	5.5	119,317	2.25	0.22	lbs/MMscf	1.44	1.72	0.01	0.09	2,049	0.04	0.004
Elevator Heaters (AC Mills) - 4 Heaters Total	NatGas	NF	17.2	MMscf	84	100	0.6	5.5	119,317	2.25	0.22	lbs/MMscf	0.72	0.86	0.005	0.05	1,025	0.02	0.002
Comfort Heating - Various Water Heaters, Unit Heaters, Radiant Heaters, Office Heaters, and Furnaces	NatGas	NF	19.4	MMscf	84	100	0.6	5.5	119,317	2.25	0.22	lbs/MMscf	0.81	0.97	0.006	0.05	1,156	0.02	0.002
Storage Tanks																			
Diesel Fuel Aboveground Storage Tank at Quarry - 50,000 Gallons	DieselAST50K	NF	8,760	hrs	0	0	0	0.003	0	0	0	lbs/hr	0	0	0	0.01	0	0	0
Diesel Fuel Aboveground Storage Tank at Plant - 12,000 Gallons	DieselAST12K	NF	8,760	hrs	0	0	0	0.0008	0	0	0	lbs/hr	0	0	0	0.004	0	0	0
On-Spec Used Oil Aboveground Storage Tank - 31,000 Gallons	OSUOAST31K	NF	8,760	hrs	0	0	0	0.00002	0	0	0	lbs/hr	0	0	0	0.0001	0	0	0
On-Spec Used Oil Aboveground Storage Tank - 28,700 Gallons	OSUAAST28K	NF	8,760	hrs	0	0	0	0.00002	0	0	0	lbs/hr	0	0	0	0.0001	0	0	0
On-Spec Used Oil Aboveground Storage Tank - 28,700 Gallons	OSUAAST28K	NF	8,760	hrs	0	0	0	0.00002	0	0	0	lbs/hr	0	0	0	0.0001	0	0	0
Gasoline Aboveground Storage Tank - 2,000 Gallons	GasAST2000	NF	8,760	hrs	0	0	0	0.12	0	0	0	lbs/hr	0	0	0	0.51	0	0	0
Lube Oil Aboveground Storage Tank - 1,000 Gallons	LubeAST1000	NF	8,760	hrs	0	0	0	0.000001	0	0	0	lbs/hr	0	0	0	0.000003	0	0	0
Lube Oil Aboveground Storage Tank - 1,000 Gallons	LubeAST1000	NF	8,760	hrs	0	0	0	0.000001	0	0	0	lbs/hr	0	0	0	0.000003	0	0	0
Lube Oil Aboveground Storage Tank - 1,000 Gallons	LubeAST1000	NF	8,760	hrs	0	0	0	0.000001	0	0	0	lbs/hr	0	0	0	0.000003	0	0	0
Lube Oil Aboveground Storage Tank - 1,000 Gallons	LubeAST1000	NF	8,760	hrs	0	0	0	0.000001	0	0	0	lbs/hr	0	0	0	0.000003	0	0	0
Lube Oil Aboveground Storage Tank - 1,000 Gallons	LubeAST1000	NF	8,760	hrs	0	0	0	0.000001	0	0	0	lbs/hr	0	0	0	0.000003	0	0	0
Lube Oil Aboveground Storage Tank - 1,000 Gallons	LubeAST1000	NF	8,760	hrs	0	0	0	0.000001	0	0	0	lbs/hr	0	0	0	0.000003	0	0	0
Used Oil Aboveground Storage Tank - 2,000 Gallons	OilAST2000	NF	8,760	hrs	0	0	0	0.000001	0	0	0	lbs/hr	0	0	0	0.00001	0	0	0
Used Oil Aboveground Storage Tank - 2,000 Gallons	OilAST2000	NF	8,760	hrs	0	0	0	0.000001	0	0	0	lbs/hr	0	0	0	0.00001	0	0	0
												Sum of Non-Fugitive Emissions	**5,151.28**	**5,204.82**	**11,345.89**	**16.90**	**249,612**	**21.11**	**3.04**
												Sum of Fugitive Emissions	**51.99**	**13.19**	**1.55**	**0**	**439.56**	**0.02**	**0.004**
												Total Emissions	**5,203.27**	**5,218.02**	**11,347.44**	**16.90**	**250,051**	**21.12**	**3.05**

Table 13a. Facility Hazardous Air Pollutant (HAP) Emission Factors

Process Code	Process Description	HAP Information			Production Rate Units	Reference
		Name	EF	EF Units		
Mining Operations						
Blasting	Blasting	Lead	3.13E-05	lbs/ton ANFO	tons ANFO	AP-42, Tables 1.3-8 and 1.3-10 (05/10), assuming a fuel oil to ammonium nitrate ratio of 9.0%, 137,000 Btu/gallon, and 19,300 Btu/lb diesel
		POM	8.37E-05	lbs/ton ANFO	tons ANFO	
		Formaldehyde	1.55E-03	lbs/ton ANFO	tons ANFO	
		Arsenic	1.39E-05	lbs/ton ANFO	tons ANFO	
		Beryllium	1.04E-05	lbs/ton ANFO	tons ANFO	
		Cadmium	1.04E-05	lbs/ton ANFO	tons ANFO	
		Chromium	1.04E-05	lbs/ton ANFO	tons ANFO	
		Mercury	1.04E-05	lbs/ton ANFO	tons ANFO	
		Manganese	2.08E-05	lbs/ton ANFO	tons ANFO	
		Nickel	1.04E-05	lbs/ton ANFO	tons ANFO	
		Selenium	5.21E-05	lbs/ton ANFO	tons ANFO	
		Total HAPs	1.80E-03	lbs/ton ANFO	tons ANFO	
Kilns						
Kiln1	Rotary Kiln 1 (H3-K1-K)	1,1-Dichloroethene	3.73E-05	lbs/ton Clinker	tons Clinker	(1)
		Acetaldehyde	2.34E-04	lbs/ton Clinker	tons Clinker	(1)
		Ammonia	1.00E-02	lbs/ton Clinker	tons Clinker	(3)
		Arsenic	1.20E-05	lbs/ton Clinker	tons Clinker	(3)
		Benzene	9.86E-04	lbs/ton Clinker	tons Clinker	(1)
		Beryllium	6.60E-07	lbs/ton Clinker	tons Clinker	(3)
		Cadmium	8.92E-06	lbs/ton Clinker	tons Clinker	(1)
		Chromium	1.40E-04	lbs/ton Clinker	tons Clinker	(3)
		Chromium (Hexavalent)	4.43E-06	lbs/ton Clinker	tons Clinker	(4)
		Dibenzofurans	3.96E-08	lbs/ton Clinker	tons Clinker	(1)
		Fluorides	3.63E-04	lbs/ton Clinker	tons Clinker	(1)
		Formaldehyde	1.52E-03	lbs/ton Clinker	tons Clinker	(2)
		Sulfuric Acid Mist	1.98E-03	lbs/ton Clinker	tons Clinker	(5), Maximum Observed Value
		Hydrochloric Acid	4.55E-03	lbs/ton Clinker	tons Clinker	(2)
		Hydrogen Fluoride	3.24E-04	lbs/ton Clinker	tons Clinker	(1)
		Lead	4.29E-05	lbs/ton Clinker	tons Clinker	(1)
		m,p-Xylene	1.08E-04	lbs/ton Clinker	tons Clinker	(1)
		Manganese	8.71E-04	lbs/ton Clinker	tons Clinker	(4)
		Mercury	1.51E-04	lbs/ton Clinker	tons Clinker	(6)
		Methylene Chloride	5.77E-05	lbs/ton Clinker	tons Clinker	(1)
		Naphthalene	1.43E-04	lbs/ton Clinker	tons Clinker	(1)
		Nickel	4.90E-06	lbs/ton Clinker	tons Clinker	(1)
Kiln1 (cont'd.)	Rotary Kiln 1 (H3-K1-K)	PCB	1.22E-06	lbs/ton Clinker	tons Clinker	(1) - Average of the sum of all PCB lb/hour values for all fuels, converted to lb/ton clinker.
		Phenol	3.39E-05	lbs/ton Clinker	tons Clinker	(1)
		POM	1.74E-05	lbs/ton Clinker	tons Clinker	(1)
		Selenium	2.00E-04	lbs/ton Clinker	tons Clinker	(3)
		Toluene	2.71E-04	lbs/ton Clinker	tons Clinker	(1)
		Total HAPs	2.21E-02	lbs/ton Clinker	tons Clinker	---
Kiln2	Rotary Kiln 2 (H3-K2-K)	1,1-Dichloroethene	3.73E-05	lbs/ton Clinker	tons Clinker	(1)
		Acetaldehyde	2.34E-04	lbs/ton Clinker	tons Clinker	(1)
		Ammonia	1.00E-02	lbs/ton Clinker	tons Clinker	(3)
		Arsenic	1.20E-05	lbs/ton Clinker	tons Clinker	(3)
		Benzene	9.86E-04	lbs/ton Clinker	tons Clinker	(1)
		Beryllium	6.60E-07	lbs/ton Clinker	tons Clinker	(3)
		Cadmium	8.92E-06	lbs/ton Clinker	tons Clinker	(1)
		Chromium	1.40E-04	lbs/ton Clinker	tons Clinker	(3)
		Chromium (Hexavalent)	4.43E-06	lbs/ton Clinker	tons Clinker	(4)
		Dibenzofurans	3.96E-08	lbs/ton Clinker	tons Clinker	(1)
		Fluorides	3.63E-04	lbs/ton Clinker	tons Clinker	(1)
		Formaldehyde	1.52E-03	lbs/ton Clinker	tons Clinker	(2)
		Sulfuric Acid Mist	1.98E-03	lbs/ton Clinker	tons Clinker	(5), Maximum Observed Value
		Hydrochloric Acid	4.55E-03	lbs/ton Clinker	tons Clinker	(2)
		Hydrogen Fluoride	3.24E-04	lbs/ton Clinker	tons Clinker	(1)
		Lead	4.29E-05	lbs/ton Clinker	tons Clinker	(1)
		m,p-Xylene	1.08E-04	lbs/ton Clinker	tons Clinker	(1)
		Manganese	8.71E-04	lbs/ton Clinker	tons Clinker	(4)
		Mercury	1.51E-04	lbs/ton Clinker	tons Clinker	(6)
		Methylene Chloride	5.77E-05	lbs/ton Clinker	tons Clinker	(1)
		Naphthalene	1.43E-04	lbs/ton Clinker	tons Clinker	(1)
		Nickel	4.90E-06	lbs/ton Clinker	tons Clinker	(1)
Kiln2 (cont.)	Rotary Kiln 2 (H3-K2-K)	PCB	1.22E-06	lbs/ton Clinker	tons Clinker	(1) - Average of the sum of all PCB lb/hour values for all fuels, converted to lb/ton clinker.
		Phenol	3.39E-05	lbs/ton Clinker	tons Clinker	(1)
		POM	1.74E-05	lbs/ton Clinker	tons Clinker	(1)
		Selenium	2.00E-04	lbs/ton Clinker	tons Clinker	(3)
		Toluene	2.71E-04	lbs/ton Clinker	tons Clinker	(1)
		Total HAPs	2.21E-02	lbs/ton Clinker	tons Clinker	---
Kiln3	Rotary Kiln 3 (H3-K3-K)	1,1-Dichloroethene	3.73E-05	lbs/ton Clinker	tons Clinker	(1)
		Acetaldehyde	2.34E-04	lbs/ton Clinker	tons Clinker	(1)
		Ammonia	1.00E-02	lbs/ton Clinker	tons Clinker	(3)
		Arsenic	1.20E-05	lbs/ton Clinker	tons Clinker	(3)
		Benzene	9.86E-04	lbs/ton Clinker	tons Clinker	(1)
		Beryllium	6.60E-07	lbs/ton Clinker	tons Clinker	(3)
		Cadmium	8.92E-06	lbs/ton Clinker	tons Clinker	(1)
		Chromium	1.40E-04	lbs/ton Clinker	tons Clinker	(3)
		Chromium (Hexavalent)	4.43E-06	lbs/ton Clinker	tons Clinker	(4)
		Dibenzofurans	3.96E-08	lbs/ton Clinker	tons Clinker	(1)
		Fluorides	3.63E-04	lbs/ton Clinker	tons Clinker	(1)
		Formaldehyde	1.52E-03	lbs/ton Clinker	tons Clinker	(2)
		Sulfuric Acid Mist	1.98E-03	lbs/ton Clinker	tons Clinker	(5), Maximum Observed Value
		Hydrochloric Acid	4.55E-03	lbs/ton Clinker	tons Clinker	(2)
		Hydrogen Fluoride	3.24E-04	lbs/ton Clinker	tons Clinker	(1)
		Lead	4.29E-05	lbs/ton Clinker	tons Clinker	(1)
		m,p-Xylene	1.08E-04	lbs/ton Clinker	tons Clinker	(1)
		Manganese	8.71E-04	lbs/ton Clinker	tons Clinker	(4)
		Mercury	1.51E-04	lbs/ton Clinker	tons Clinker	(6)
		Methylene Chloride	5.77E-05	lbs/ton Clinker	tons Clinker	(1)
		Naphthalene	1.43E-04	lbs/ton Clinker	tons Clinker	(1)
		Nickel	4.90E-06	lbs/ton Clinker	tons Clinker	(1)
		PCB	1.22E-06	lbs/ton Clinker	tons Clinker	(1) - Average of the sum of all PCB lb/hour values for all fuels, converted to lb/ton clinker.
		Phenol	3.39E-05	lbs/ton Clinker	tons Clinker	(1)
		POM	1.74E-05	lbs/ton Clinker	tons Clinker	(1)
		Selenium	2.00E-04	lbs/ton Clinker	tons Clinker	(3)
		Toluene	2.71E-04	lbs/ton Clinker	tons Clinker	(1)
		Total HAPs	2.21E-02	lbs/ton Clinker	tons Clinker	---

Table 13a. Facility Hazardous Air Pollutant (HAP) Emission Factors

Process Code	Process Description	HAP Information			Production Rate Units	Reference
		Name	EF	EF Units		
Kiln4	Rotary Kiln 4 (H3-K4-K)	1,1-Dichloroethene	3.73E-05	lbs/ton Clinker	tons Clinker	(1)
		Acetaldehyde	2.34E-04	lbs/ton Clinker	tons Clinker	(1)
		Ammonia	1.00E-02	lbs/ton Clinker	tons Clinker	(3)
		Arsenic	1.20E-05	lbs/ton Clinker	tons Clinker	(3)
Kiln 4 (cont'd.)	Rotary Kiln 4 (H3-K4-K)	Benzene	9.86E-04	lbs/ton Clinker	tons Clinker	(1)
		Beryllium	6.60E-07	lbs/ton Clinker	tons Clinker	(3)
		Cadmium	8.92E-06	lbs/ton Clinker	tons Clinker	(1)
		Chromium	1.40E-04	lbs/ton Clinker	tons Clinker	(3)
		Chromium (Hexavalent)	4.43E-06	lbs/ton Clinker	tons Clinker	(4)
		Dibenzofurans	3.96E-08	lbs/ton Clinker	tons Clinker	(7)
		Fluorides	3.63E-04	lbs/ton Clinker	tons Clinker	(1)
		Formaldehyde	1.48E-02	lbs/ton Clinker	tons Clinker	(2); Roller Mill On factor (higher emission factor)
		Sulfuric Acid Mist	1.98E-03	lbs/ton Clinker	tons Clinker	(5), Maximum Observed Value
		Hydrochloric Acid	1.11E-01	lbs/ton Clinker	tons Clinker	(2); Roller Mill Off factor (higher emission factor)
		Hydrogen Fluoride	3.24E-04	lbs/ton Clinker	tons Clinker	(1)
		Lead	4.29E-05	lbs/ton Clinker	tons Clinker	(1)
		m,p-Xylene	1.08E-04	lbs/ton Clinker	tons Clinker	(1)
		Manganese	8.71E-04	lbs/ton Clinker	tons Clinker	(4)
		Mercury	8.56E-05	lbs/ton Clinker	tons Clinker	(6); Roller Mill Off factor (higher emission factor)
		Methylene Chloride	5.77E-05	lbs/ton Clinker	tons Clinker	(1)
		Naphthalene	1.43E-04	lbs/ton Clinker	tons Clinker	(1)
		Nickel	4.90E-06	lbs/ton Clinker	tons Clinker	(1)
		PCB	1.22E-06	lbs/ton Clinker	tons Clinker	(1); Average of the sum of all PCB lb/hour values for all fuels, converted to lb/ton clinker.
		Phenol	3.39E-05	lbs/ton Clinker	tons Clinker	(1)
		POM	1.74E-05	lbs/ton Clinker	tons Clinker	(1)
		Selenium	2.00E-04	lbs/ton Clinker	tons Clinker	(3)
		Toluene	2.71E-04	lbs/ton Clinker	tons Clinker	(1)
		Total HAPs	1.42E-01	lbs/ton Clinker	tons Clinker	---
Fuel Burning Equipment						
DieselGen	Diesel-fueled Emergency Engine	Benzene	5.43E-06	lbs/hp-hr	hp-hrs	AP-42, Tables 3.4-3 and 3.4-4 (10/96), and a diesel brake-specific fuel consumption of 7,000 Btu/hp-hr. Converted to lb/hp-hr.
		Toluene	1.97E-06	lbs/hp-hr	hp-hrs	
		Xylenes	1.35E-06	lbs/hp-hr	hp-hrs	
		Formaldehyde	5.52E-07	lbs/hp-hr	hp-hrs	
		Acetaldehyde	1.76E-07	lbs/hp-hr	hp-hrs	
		Acrolein	5.52E-08	lbs/hp-hr	hp-hrs	
		Naphthalene	9.10E-07	lbs/hp-hr	hp-hrs	
		Acenaphthylene	6.46E-08	lbs/hp-hr	hp-hrs	
		Acenaphthene	3.28E-08	lbs/hp-hr	hp-hrs	
DieselGen (cont'd.)	Diesel-fueled Emergency Engine	Fluorene	8.96E-08	lbs/hp-hr	hp-hrs	AP-42, Tables 3.4-3 and 3.4-4 (10/96), and a diesel brake-specific fuel consumption of 7,000 Btu/hp-hr. Converted to lb/hp-hr.
		Phenanthrene	2.86E-07	lbs/hp-hr	hp-hrs	
		Anthracene	8.61E-09	lbs/hp-hr	hp-hrs	
		Fluoranthene	2.82E-08	lbs/hp-hr	hp-hrs	
		Pyrene	2.60E-08	lbs/hp-hr	hp-hrs	
		Benz(a)anthracene	4.35E-09	lbs/hp-hr	hp-hrs	
		Chrysene	1.07E-08	lbs/hp-hr	hp-hrs	
		Benzo(b)fluoranthene	7.77E-09	lbs/hp-hr	hp-hrs	
		Benzo(k)fluoranthene	1.53E-09	lbs/hp-hr	hp-hrs	
		Benzo(a)pyrene	1.80E-09	lbs/hp-hr	hp-hrs	
		Indeno(1,2,3-cd)pyrene	2.90E-09	lbs/hp-hr	hp-hrs	
		Dibenz(a,h)anthracene	2.42E-09	lbs/hp-hr	hp-hrs	
		Benzo(g,h,i)perylene	3.89E-09	lbs/hp-hr	hp-hrs	
		Total HAPs	1.10E-05	lbs/hp-hr	hp-hrs	
NatGas	Natural Gas Combustion	Lead	4.90E-07	lbs/MMBtu	MMBtus	AP-42, Tables 1.4-2, 1.4-3, and 1.4-4 (07/98) and 1,020 Btu/scf
		2-Methylnaphthalene	2.35E-08	lbs/MMBtu	MMBtus	
		3-Methylchloranthrene	1.76E-09	lbs/MMBtu	MMBtus	
		7,12-Dimethylbenz(a)anthracene	1.57E-08	lbs/MMBtu	MMBtus	
		Acenaphthene	1.76E-09	lbs/MMBtu	MMBtus	
		Acenaphthylene	1.76E-09	lbs/MMBtu	MMBtus	
		Anthracene	2.35E-09	lbs/MMBtu	MMBtus	
		Benz(a)anthracene	1.76E-09	lbs/MMBtu	MMBtus	
		Benzene	2.06E-06	lbs/MMBtu	MMBtus	
		Benzo(a)pyrene	1.18E-09	lbs/MMBtu	MMBtus	
		Benzo(b)fluoranthene	1.76E-09	lbs/MMBtu	MMBtus	
		Benzo(g,h,i)perylene	1.18E-09	lbs/MMBtu	MMBtus	
		Benzo(k)fluoranthene	1.76E-09	lbs/MMBtu	MMBtus	
		Chrysene	1.76E-09	lbs/MMBtu	MMBtus	
		Dibenz(a,h)anthracene	1.18E-09	lbs/MMBtu	MMBtus	
		Dichlorobenzene	1.18E-06	lbs/MMBtu	MMBtus	
		Fluoranthene	2.94E-09	lbs/MMBtu	MMBtus	
		Fluorene	2.75E-09	lbs/MMBtu	MMBtus	
		Formaldehyde	7.35E-05	lbs/MMBtu	MMBtus	
		Hexane	1.76E-03	lbs/MMBtu	MMBtus	
NatGas (cont'd.)	Natural Gas Combustion	Indeno(1,2,3-cd)pyrene	1.76E-09	lbs/MMBtu	MMBtus	AP-42, Tables 1.4-2, 1.4-3, and 1.4-4 (07/98) and 1,020 Btu/scf
		Naphthalene	5.98E-07	lbs/MMBtu	MMBtus	
		Phenanthrene	1.67E-08	lbs/MMBtu	MMBtus	
		Pyrene	4.90E-09	lbs/MMBtu	MMBtus	
		Toluene	3.33E-06	lbs/MMBtu	MMBtus	
		Arsenic	1.96E-07	lbs/MMBtu	MMBtus	
		Beryllium	1.18E-08	lbs/MMBtu	MMBtus	
		Cadmium	1.08E-06	lbs/MMBtu	MMBtus	
		Chromium	1.37E-06	lbs/MMBtu	MMBtus	
		Cobalt	8.24E-08	lbs/MMBtu	MMBtus	
		Manganese	3.73E-07	lbs/MMBtu	MMBtus	
		Mercury	2.55E-07	lbs/MMBtu	MMBtus	
		Nickel	2.06E-06	lbs/MMBtu	MMBtus	
		Selenium	2.35E-08	lbs/MMBtu	MMBtus	
		Total HAPs	1.85E-03	lbs/MMBtu	MMBtus	
NGGen	Natural Gas Engine Driven Generator	1,1,2,2-Tetrachloroethane	4.20E-07	lbs/hp-hr	hp-hrs	HAP emission factors obtained from AP-42, Section 3.2, Table 3.2-2 for 4-Stroke Lean Burn Engines (07/00). A brake-specific fuel consumption of 7000 Btu/hp-hr was assumed.
		1,1,2-Trichloroethane	3.34E-07	lbs/hp-hr	hp-hrs	
		1,1-Dichloroethane	2.48E-07	lbs/hp-hr	hp-hrs	
		1,2-Dichloroethane	2.48E-07	lbs/hp-hr	hp-hrs	
		1,2-Dichloropropane	2.82E-07	lbs/hp-hr	hp-hrs	
		1,3-Butadiene	2.80E-06	lbs/hp-hr	hp-hrs	
		1,3-Dichloropropene	2.77E-07	lbs/hp-hr	hp-hrs	
		2-Methylnaphthalene	3.49E-07	lbs/hp-hr	hp-hrs	
		2,2,4-Trimethylpentane	2.63E-06	lbs/hp-hr	hp-hrs	
		Acenaphthene	1.31E-08	lbs/hp-hr	hp-hrs	
		Acenaphthylene	5.81E-08	lbs/hp-hr	hp-hrs	
		Acetaldehyde	8.78E-05	lbs/hp-hr	hp-hrs	
		Acrolein	5.40E-05	lbs/hp-hr	hp-hrs	
		Benzene	4.62E-06	lbs/hp-hr	hp-hrs	
		Benzo(b)fluoranthene	1.74E-09	lbs/hp-hr	hp-hrs	

Table 13a. Facility Hazardous Air Pollutant (HAP) Emission Factors

Process Code	Process Description	HAP Information			Production Rate Units	Reference
		Name	EF	EF Units		
		Benzo(e)pyrene	4.36E-09	lbs/hp-hr	hp-hrs	
		Benzo(g,h,i)perylene	4.35E-09	lbs/hp-hr	hp-hrs	
		Biphenyl	2.23E-06	lbs/hp-hr	hp-hrs	
		Carbon Tetrachloride	3.85E-07	lbs/hp-hr	hp-hrs	
NGGen (cont'd.)	Natural Gas Engine Driven Generator	Chlorobenzene	3.19E-07	lbs/hp-hr	hp-hrs	HAP emission factors obtained from AP-42, Section 3.2, Table 3.2-2 for 4-Stroke Lean Burn Engines (07/00). A brake-specific fuel consumption of 7000 Btu/hp-hr was assumed.
		Chloroethane	1.96E-08	lbs/hp-hr	hp-hrs	
		Chloroform	2.99E-07	lbs/hp-hr	hp-hrs	
		Chrysene	7.28E-09	lbs/hp-hr	hp-hrs	
		Ethylbenzene	4.17E-07	lbs/hp-hr	hp-hrs	
		Ethylene Dibromide	4.65E-07	lbs/hp-hr	hp-hrs	
		Fluoranthene	1.17E-08	lbs/hp-hr	hp-hrs	
		Fluorene	5.95E-08	lbs/hp-hr	hp-hrs	
		Formaldehyde	5.54E-04	lbs/hp-hr	hp-hrs	
		Methanol	2.63E-05	lbs/hp-hr	hp-hrs	
		Methylene Chloride	2.10E-07	lbs/hp-hr	hp-hrs	
		n-Hexane	1.17E-05	lbs/hp-hr	hp-hrs	
		Naphthalene	7.81E-07	lbs/hp-hr	hp-hrs	
		PAH	2.82E-07	lbs/hp-hr	hp-hrs	
		Phenanthrene	1.09E-07	lbs/hp-hr	hp-hrs	
		Phenol	2.52E-07	lbs/hp-hr	hp-hrs	
		Pyrene	1.43E-08	lbs/hp-hr	hp-hrs	
		Styrene	2.48E-07	lbs/hp-hr	hp-hrs	
		Tetrachloroethane	2.60E-08	lbs/hp-hr	hp-hrs	
		Toluene	4.28E-06	lbs/hp-hr	hp-hrs	
		Vinyl Chloride	1.56E-07	lbs/hp-hr	hp-hrs	
		Xylene	1.93E-06	lbs/hp-hr	hp-hrs	
		Total HAPs	7.59E-04	lbs/hp-hr	hp-hrs	
AGG-Gen	AGG-Gen	Benzene	5.43E-06	lbs/hp-hr	hp-hr	AP-42 Tables 3.4-3 and 3.4-4 (10/96), and 7,000 Btu/hp-hr
		Toluene	1.97E-06	lbs/hp-hr		
		Xylenes	1.35E-06	lbs/hp-hr		
		Formaldehyde	5.52E-07	lbs/hp-hr		
		Acetaldehyde	1.76E-07	lbs/hp-hr		
		Acrolein	5.52E-08	lbs/hp-hr		
		Naphthalene	9.10E-07	lbs/hp-hr		
		Acenaphthylene	6.46E-08	lbs/hp-hr		
		Acenaphthene	3.28E-08	lbs/hp-hr		
		Fluorene	8.96E-08	lbs/hp-hr		
		Phenanthrene	2.86E-07	lbs/hp-hr		
		Anthracene	8.61E-09	lbs/hp-hr		
		Fluoranthene	2.82E-08	lbs/hp-hr		
		Pyrene	2.60E-08	lbs/hp-hr		
		Benzo(a)anthracene	4.35E-09	lbs/hp-hr		
		Chrysene	1.07E-08	lbs/hp-hr		
		Benzo(b)fluoranthene	7.77E-09	lbs/hp-hr		
		Benzo(k)fluoranthene	1.53E-09	lbs/hp-hr		
		Benzo(a)pyrene	1.80E-09	lbs/hp-hr	hp-hr	AP-42 Tables 3.4-3 and 3.4-4 (10/96), and 7,000 Btu/hp-hr
		Indeno(1,2,3-cd)pyrene	2.90E-09	lbs/hp-hr		
		Dibenz(a,h)anthracene	2.42E-09	lbs/hp-hr		
		Benzo(g,h,i)perylene	3.89E-09	lbs/hp-hr		
		Total HAPs	1.10E-05	lbs/hp-hr		
Material Transfer Operations						
Cement	Material Transfer of Cement	Arsenic	4.24E-09	lbs/ton	tons	AP-42, Table 11.12-8 (06/06), Cement Silo Filling (controlled)
		Beryllium	4.86E-10	lbs/ton	tons	
		Chromium	2.90E-08	lbs/ton	tons	
		Lead	1.09E-08	lbs/ton	tons	
		Manganese	1.17E-07	lbs/ton	tons	
		Nickel	4.18E-08	lbs/ton	tons	
		Total HAPs	2.03E-07	lbs/ton	tons	
MinFly	Material Transfer of Flyash	Arsenic	1.00E-06	lbs/ton	tons	AP-42, Table 11.12-8 (06/06), Cement Supplement Silo Filling (controlled)
		Beryllium	9.04E-08	lbs/ton	tons	
		Cadmium	1.98E-10	lbs/ton	tons	
		Chromium	1.22E-06	lbs/ton	tons	AP-42, Table 11.12-8 (06/06), Cement Supplement Silo Filling (controlled)
		Lead	5.20E-07	lbs/ton	tons	
		Manganese	2.56E-07	lbs/ton	tons	
		Nickel	2.28E-06	lbs/ton	tons	
		Phosphorus	3.54E-06	lbs/ton	tons	
		Selenium	7.24E-08	lbs/ton	tons	
		Total HAPs	8.98E-06	lbs/ton	tons	
Storage Tanks						
DieselAST12K	12,000-Gallon Diesel Aboveground Storage Tank at Plant	n-Hexane	0.00E+00	lbs/hr	hrs	EPA TANKS 4.0.9d Output
		Benzene	2.28E-06	lbs/hr	hrs	
		Toluene	1.94E-05	lbs/hr	hrs	
		Ethylbenzene	2.28E-06	lbs/hr	hrs	
		Xylene (-m)	4.91E-05	lbs/hr	hrs	
		Total HAPs	7.31E-05	lbs/hr	hrs	
DieselAST50K	50,000-Gallon Diesel Aboveground Storage Tank at Quarry	n-Hexane	2.28E-06	lbs/hr	hrs	EPA TANKS 4.0.9d Output
		Benzene	6.85E-06	lbs/hr	hrs	
		Toluene	7.76E-05	lbs/hr	hrs	
		Ethylbenzene	1.14E-05	lbs/hr	hrs	
		Xylene (-m)	2.00E-04	lbs/hr	hrs	
		Total HAPs	2.98E-04	lbs/hr	hrs	
GasAST2000	2,000-Gallon Gasoline Aboveground Storage Tank	Benzene	6.96E-04	lbs/hr	hrs	EPA TANKS 4.0.9d Output
		Ethylbenzene	5.48E-05	lbs/hr	hrs	
		Hexane (-n)	6.21E-04	lbs/hr	hrs	
		Isooctane	0.00E+00	lbs/hr	hrs	
		Isopropyl Benzene	7.99E-06	lbs/hr	hrs	
		Toluene	7.97E-04	lbs/hr	hrs	
		Xylene (-m)	2.31E-04	lbs/hr	hrs	
		Total HAPs	2.41E-03	lbs/hr	hrs	
LubeAST1000	1,000-gallon Aboveground Storage Tank - Lube Oil	Total HAPs	1.14E-06	lbs/hr	hrs	EPA TANKS 4.0.9d Output
OilAST2000	Used Oil Aboveground Storage Tank - 2,000 Gallons	Total HAPs	1.14E-06	lbs/hr	hrs	EPA TANKS 4.0.9d Output
OSUOAST31K	31,000-gallon Aboveground Storage Tank - On-Spec Used Oil	Total HAPs	2.05E-05	lbs/hr	hrs	EPA TANKS 4.0.9d Output
OSUAAST28K	28,000-gallon Aboveground Storage Tank - On-Spec Used Oil	Total HAPs	1.83E-05	lbs/hr	hrs	EPA TANKS 4.0.9d Output

References:

(1) 1991 Source Test by Engineering Science - average lb/hour value for all fuels; lb/ton clinker value calculated by dividing the lb/hour value by the average clinker production rate measured during the test.
(2) April 2002 Source Testing; lb/ton clinker value calculated by dividing the lb/hour value by the average clinker production rate measured during the test.
(3) AP-42, Section 11.6 (01/95), Table 11.6-9 (Fabric Filter)
(4) From California Air Toxic Emission Factors (CATEF) Database.
(5) 1996 Hydrochloric Acid Source Testing
(6) 2007 Source Testing by Delta Air Quality Services
(7) December 2010 NESHAP Compliance Testing (Kiln 4 Only)

Table 14a. Facility Hazardous Air Pollutant (HAP) Emissions - PTE Calculations

Unit ID	Process Code	Non-Fug. (NF) / Fug. (F)	Process Rate	Rate Units	HAP Information			Emissions (tpy)
					Name	EF	EF Units	
Mining Operations								
Blasting	Blasting	F	1,552	tons ANFO	Lead	3.13E-05	lbs/ton ANFO	2.43E-05
					POM	8.37E-05	lbs/ton ANFO	6.49E-05
					Formaldehyde	1.55E-03	lbs/ton ANFO	1.20E-03
					Arsenic	1.39E-05	lbs/ton ANFO	1.08E-05
					Beryllium	1.04E-05	lbs/ton ANFO	8.09E-06
					Cadmium	1.04E-05	lbs/ton ANFO	8.09E-06
					Chromium	1.04E-05	lbs/ton ANFO	8.09E-06
					Mercury	1.04E-05	lbs/ton ANFO	8.09E-06
					Manganese	2.08E-05	lbs/ton ANFO	1.62E-05
					Nickel	1.04E-05	lbs/ton ANFO	8.09E-06
					Selenium	5.21E-05	lbs/ton ANFO	4.04E-05
					Total HAPs	-	-	1.40E-03
Kilns								
Kiln 1	Rotary Kiln 1 (H3-K1-K)	NF	166,440	tons clinker	1,1-Dichloroethene	3.73E-05	lbs/ton Clinker	3.10E-03
					Acetaldehyde	2.34E-04	lbs/ton Clinker	1.95E-02
					Ammonia	1.00E-02	lbs/ton Clinker	8.32E-01
					Arsenic	1.20E-05	lbs/ton Clinker	9.99E-04
					Benzene	9.86E-04	lbs/ton Clinker	8.21E-02
					Beryllium	6.60E-07	lbs/ton Clinker	5.49E-05
					Cadmium	8.92E-06	lbs/ton Clinker	7.42E-04
					Chromium	1.40E-04	lbs/ton Clinker	1.17E-02
					Chromium (Hexavalent)	4.43E-06	lbs/ton Clinker	3.69E-04
					Dibenzofurans	3.96E-08	lbs/ton Clinker	3.30E-06
					Fluorides	3.63E-04	lbs/ton Clinker	3.02E-02
					Formaldehyde	1.52E-03	lbs/ton Clinker	1.26E-01
					Sulfuric Acid Mist	1.98E-03	lbs/ton Clinker	1.65E-01
					Hydrochloric Acid	4.55E-03	lbs/ton Clinker	3.79E-01
					Hydrogen Fluoride	3.24E-04	lbs/ton Clinker	2.70E-02
					Lead	4.29E-05	lbs/ton Clinker	3.57E-03
					m,p-Xylene	1.08E-04	lbs/ton Clinker	8.99E-03
					Manganese	8.71E-04	lbs/ton Clinker	7.25E-02
					Mercury	1.51E-04	lbs/ton Clinker	1.26E-02
					Methylene Chloride	5.77E-05	lbs/ton Clinker	4.80E-03
					Naphthalene	1.43E-04	lbs/ton Clinker	1.19E-02
					Nickel	4.90E-06	lbs/ton Clinker	4.08E-04
					PCB	1.22E-06	lbs/ton Clinker	1.02E-04
					Phenol	3.39E-05	lbs/ton Clinker	2.82E-03
					POM	1.74E-05	lbs/ton Clinker	1.45E-03
					Selenium	2.00E-04	lbs/ton Clinker	1.66E-02
					Toluene	2.71E-04	lbs/ton Clinker	2.26E-02
					Total HAPs	-	-	1.84E+00
Kiln 2	Rotary Kiln 2 (H3-K2-K)	NF	166,440	tons clinker	1,1-Dichloroethene	3.73E-05	lbs/ton Clinker	3.10E-03
					Acetaldehyde	2.34E-04	lbs/ton Clinker	1.95E-02
					Ammonia	1.00E-02	lbs/ton Clinker	8.32E-01
					Arsenic	1.20E-05	lbs/ton Clinker	9.99E-04
					Benzene	9.86E-04	lbs/ton Clinker	8.21E-02
					Beryllium	6.60E-07	lbs/ton Clinker	5.49E-05
					Cadmium	8.92E-06	lbs/ton Clinker	7.42E-04
					Chromium	1.40E-04	lbs/ton Clinker	1.17E-02
					Chromium (Hexavalent)	4.43E-06	lbs/ton Clinker	3.69E-04
					Dibenzofurans	3.96E-08	lbs/ton Clinker	3.30E-06
					Fluorides	3.63E-04	lbs/ton Clinker	3.02E-02
					Formaldehyde	1.52E-03	lbs/ton Clinker	1.26E-01
					Sulfuric Acid Mist	1.98E-03	lbs/ton Clinker	1.65E-01
					Hydrochloric Acid	4.55E-03	lbs/ton Clinker	3.79E-01
					Hydrogen Fluoride	3.24E-04	lbs/ton Clinker	2.70E-02
					Lead	4.29E-05	lbs/ton Clinker	3.57E-03
					m,p-Xylene	1.08E-04	lbs/ton Clinker	8.99E-03
					Manganese	8.71E-04	lbs/ton Clinker	7.25E-02
					Mercury	1.51E-04	lbs/ton Clinker	1.26E-02
					Methylene Chloride	5.77E-05	lbs/ton Clinker	4.80E-03
					Naphthalene	1.43E-04	lbs/ton Clinker	1.19E-02
					Nickel	4.90E-06	lbs/ton Clinker	4.08E-04
					PCB	1.22E-06	lbs/ton Clinker	1.02E-04
					Phenol	3.39E-05	lbs/ton Clinker	2.82E-03
					POM	1.74E-05	lbs/ton Clinker	1.45E-03
					Selenium	2.00E-04	lbs/ton Clinker	1.66E-02
					Toluene	2.71E-04	lbs/ton Clinker	2.26E-02
					Total HAPs	-	-	1.84E+00
Kiln 3	Rotary Kiln 3 (H3-K3-K)	NF	166,440	tons clinker	1,1-Dichloroethene	3.73E-05	lbs/ton Clinker	3.10E-03
					Acetaldehyde	2.34E-04	lbs/ton Clinker	1.95E-02
					Ammonia	1.00E-02	lbs/ton Clinker	8.32E-01
					Arsenic	1.20E-05	lbs/ton Clinker	9.99E-04
					Benzene	9.86E-04	lbs/ton Clinker	8.21E-02
					Beryllium	6.60E-07	lbs/ton Clinker	5.49E-05
					Cadmium	8.92E-06	lbs/ton Clinker	7.42E-04
					Chromium	1.40E-04	lbs/ton Clinker	1.17E-02
					Chromium (Hexavalent)	4.43E-06	lbs/ton Clinker	3.69E-04
					Dibenzofurans	3.96E-08	lbs/ton Clinker	3.30E-06
					Fluorides	3.63E-04	lbs/ton Clinker	3.02E-02
					Formaldehyde	1.52E-03	lbs/ton Clinker	1.26E-01
					Sulfuric Acid Mist	1.98E-03	lbs/ton Clinker	1.65E-01
					Hydrochloric Acid	4.55E-03	lbs/ton Clinker	3.79E-01
					Hydrogen Fluoride	3.24E-04	lbs/ton Clinker	2.70E-02
					Lead	4.29E-05	lbs/ton Clinker	3.57E-03
					m,p-Xylene	1.08E-04	lbs/ton Clinker	8.99E-03
					Manganese	8.71E-04	lbs/ton Clinker	7.25E-02
					Mercury	1.51E-04	lbs/ton Clinker	1.26E-02
					Methylene Chloride	5.77E-05	lbs/ton Clinker	4.80E-03
					Naphthalene	1.43E-04	lbs/ton Clinker	1.19E-02
					Nickel	4.90E-06	lbs/ton Clinker	4.08E-04
					PCB	1.22E-06	lbs/ton Clinker	1.02E-04
					Phenol	3.39E-05	lbs/ton Clinker	2.82E-03
					POM	1.74E-05	lbs/ton Clinker	1.45E-03
					Selenium	2.00E-04	lbs/ton Clinker	1.66E-02
					Toluene	2.71E-04	lbs/ton Clinker	2.26E-02
					Total HAPs	-	-	1.84E+00
					1,1-Dichloroethene	3.73E-05	lbs/ton Clinker	3.38E-02
					Acetaldehyde	2.34E-04	lbs/ton Clinker	2.12E-01
					Ammonia	1.00E-02	lbs/ton Clinker	9.07E+00
					Arsenic	1.20E-05	lbs/ton Clinker	1.09E-02
					Benzene	9.86E-04	lbs/ton Clinker	8.94E-01
					Beryllium	6.60E-07	lbs/ton Clinker	5.98E-04
					Cadmium	8.92E-06	lbs/ton Clinker	8.09E-03
					Chromium	1.40E-04	lbs/ton Clinker	1.27E-01
					Chromium (Hexavalent)	4.43E-06	lbs/ton Clinker	4.02E-03
					Dibenzofurans	3.96E-08	lbs/ton Clinker	3.59E-05
					Fluorides	3.63E-04	lbs/ton Clinker	3.29E-01
					Formaldehyde	1.48E-02	lbs/ton Clinker	1.34E+01
					Sulfuric Acid Mist	1.98E-03	lbs/ton Clinker	1.80E+00

Table 14a. Facility Hazardous Air Pollutant (HAP) Emissions - PTE Calculations

Unit ID	Process Code	Non-Fug. (NF) / Fug. (F)	Process Rate	Rate Units	HAP Information			Emissions (tpy)
					Name	EF	EF Units	
Kiln 4	Rotary Kiln 4 (H3-K4-K)	NF	1,813,320	tons clinker	Hydrochloric Acid	1.11E-01	lbs/ton Clinker	1.01E+02
					Hydrogen Fluoride	3.24E-04	lbs/ton Clinker	2.94E-01
					Lead	4.29E-05	lbs/ton Clinker	3.89E-02
					m,p-Xylene	1.08E-04	lbs/ton Clinker	9.79E-02
					Manganese	8.71E-04	lbs/ton Clinker	7.90E-01
					Mercury	8.56E-05	lbs/ton Clinker	7.76E-02
					Methylene Chloride	5.77E-05	lbs/ton Clinker	5.23E-02
					Naphthalene	1.43E-04	lbs/ton Clinker	1.30E-01
					Nickel	4.90E-06	lbs/ton Clinker	4.44E-03
					PCB	1.22E-06	lbs/ton Clinker	1.11E-03
					Phenol	3.39E-05	lbs/ton Clinker	3.07E-02
					POM	1.74E-05	lbs/ton Clinker	1.58E-02
					Selenium	2.00E-04	lbs/ton Clinker	1.81E-01
					Toluene	2.71E-04	lbs/ton Clinker	2.46E-01
					Total HAPs	-	-	1.28E+02
Fuel Burning Equipment								
T1-MG1 - Diesel Emergency Generator	DieselGen	NF	125,000	hp-hrs	Benzene	5.43E-06	lbs/hp-hr	3.40E-04
					Toluene	1.97E-06	lbs/hp-hr	1.23E-04
					Xylenes	1.35E-06	lbs/hp-hr	8.44E-05
					Formaldehyde	5.52E-07	lbs/hp-hr	3.45E-05
					Acetaldehyde	1.76E-07	lbs/hp-hr	1.10E-05
					Acrolein	5.52E-08	lbs/hp-hr	3.45E-06
					Naphthalene	9.10E-07	lbs/hp-hr	5.69E-05
					Acenaphthylene	6.46E-08	lbs/hp-hr	4.04E-06
					Acenaphthene	3.28E-08	lbs/hp-hr	2.05E-06
					Fluorene	8.96E-08	lbs/hp-hr	5.60E-06
					Phenanthrene	2.86E-07	lbs/hp-hr	1.79E-05
					Anthracene	8.61E-09	lbs/hp-hr	5.38E-07
					Fluoranthene	2.82E-08	lbs/hp-hr	1.76E-06
					Total HAPs	-	-	6.85E-04
T1-MG1 - Diesel Emergency Generator (cont'd)	DieselGen	NF	125,000	hp-hrs	Pyrene	2.60E-08	lbs/hp-hr	1.62E-06
					Benz(a)anthracene	4.35E-09	lbs/hp-hr	2.72E-07
					Chrysene	1.07E-08	lbs/hp-hr	6.69E-07
					Benzo(b)fluoranthene	7.77E-09	lbs/hp-hr	4.86E-07
					Benzo(k)fluoranthene	1.53E-09	lbs/hp-hr	9.54E-08
					Benzo(a)pyrene	1.80E-09	lbs/hp-hr	1.12E-07
					Indeno(1,2,3-cd)pyrene	2.90E-09	lbs/hp-hr	1.81E-07
					Dibenz(a,h)anthracene	2.42E-09	lbs/hp-hr	1.51E-07
					Benzo(g,h,i)perylene	3.89E-09	lbs/hp-hr	2.43E-07
					Total HAPs	-	-	3.83E-06
H3-K-MG - Natural Gas Motor Generator	NGGen	NF	67,000	hp-hrs	1,1,2,2-Tetrachloroethane	4.20E-07	lbs/hp-hr	1.41E-05
					1,1,2-Trichloroethane	3.34E-07	lbs/hp-hr	1.12E-05
					1,1-Dichloroethane	2.48E-07	lbs/hp-hr	8.30E-06
					1,2-Dichloroethane	2.48E-07	lbs/hp-hr	8.30E-06
					1,2-Dichloropropane	2.82E-07	lbs/hp-hr	9.46E-06
					1,3-Butadiene	2.80E-06	lbs/hp-hr	9.39E-05
					1,3-Dichloropropene	2.77E-07	lbs/hp-hr	9.29E-06
					2-Methylnaphthalene	3.49E-07	lbs/hp-hr	1.17E-05
					2,2,4-Trimethylpentane	2.63E-06	lbs/hp-hr	8.79E-05
					Acenaphthene	1.31E-08	lbs/hp-hr	4.40E-07
					Acenaphthylene	5.81E-08	lbs/hp-hr	1.95E-06
					Acetaldehyde	8.78E-05	lbs/hp-hr	2.94E-03
					Acrolein	5.40E-05	lbs/hp-hr	1.81E-03
					Benzene	4.62E-06	lbs/hp-hr	1.55E-04
					Benzo(b)fluoranthene	1.74E-09	lbs/hp-hr	5.84E-08
					Benzo(e)pyrene	4.36E-09	lbs/hp-hr	1.46E-07
					Benzo(g,h,i)perylene	4.35E-09	lbs/hp-hr	1.46E-07
					Biphenyl	2.23E-06	lbs/hp-hr	7.46E-05
					Carbon Tetrachloride	3.85E-07	lbs/hp-hr	1.29E-05
					Chlorobenzene	3.19E-07	lbs/hp-hr	1.07E-05
					Chloroethane	1.96E-08	lbs/hp-hr	6.58E-07
					Chloroform	2.99E-07	lbs/hp-hr	1.00E-05
					Chrysene	7.28E-09	lbs/hp-hr	2.44E-07
					Ethylbenzene	4.17E-07	lbs/hp-hr	1.40E-05
					Ethylene Dibromide	4.65E-07	lbs/hp-hr	1.56E-05
					Total HAPs	-	-	5.30E-03
H3-K-MG - Natural Gas Motor Generator (cont'd.)	NGGen	NF	67,000	hp-hrs	Fluoranthene	1.17E-08	lbs/hp-hr	3.90E-07
					Fluorene	5.95E-08	lbs/hp-hr	1.99E-06
					Formaldehyde	5.54E-04	lbs/hp-hr	1.86E-02
					Methanol	2.63E-05	lbs/hp-hr	8.79E-04
					Methylene Chloride	2.10E-07	lbs/hp-hr	7.04E-06
					n-Hexane	1.17E-05	lbs/hp-hr	3.90E-04
					Naphthalene	7.81E-07	lbs/hp-hr	2.62E-05
					PAH	2.82E-07	lbs/hp-hr	9.46E-06
					Phenanthrene	1.09E-07	lbs/hp-hr	3.66E-06
					Phenol	2.52E-07	lbs/hp-hr	8.44E-06
					Pyrene	1.43E-08	lbs/hp-hr	4.78E-07
					Styrene	2.48E-07	lbs/hp-hr	8.30E-06
					Tetrachloroethane	2.60E-08	lbs/hp-hr	8.72E-07
					Toluene	4.28E-06	lbs/hp-hr	1.44E-04
					Vinyl Chloride	1.56E-07	lbs/hp-hr	5.24E-06
					Xylene	1.93E-06	lbs/hp-hr	6.47E-05
					Total HAPs	-	-	2.01E-02
H3-K4-AUX - Natural Gas Auxiliary Engine	NGGen	NF	35,000	hp-hrs	1,1,2,2-Tetrachloroethane	4.20E-07	lbs/hp-hr	7.35E-06
					1,1,2-Trichloroethane	3.34E-07	lbs/hp-hr	5.84E-06
					1,1-Dichloroethane	2.48E-07	lbs/hp-hr	4.34E-06
					1,2-Dichloroethane	2.48E-07	lbs/hp-hr	4.34E-06
					1,2-Dichloropropane	2.82E-07	lbs/hp-hr	4.94E-06
					1,3-Butadiene	2.80E-06	lbs/hp-hr	4.91E-05
					1,3-Dichloropropene	2.77E-07	lbs/hp-hr	4.85E-06
					2-Methylnaphthalene	3.49E-07	lbs/hp-hr	6.10E-06
					2,2,4-Trimethylpentane	2.63E-06	lbs/hp-hr	4.59E-05
					Acenaphthene	1.31E-08	lbs/hp-hr	2.30E-07
					Acenaphthylene	5.81E-08	lbs/hp-hr	1.02E-06
					Acetaldehyde	8.78E-05	lbs/hp-hr	1.54E-03
					Acrolein	5.40E-05	lbs/hp-hr	9.44E-04
					Benzene	4.62E-06	lbs/hp-hr	8.09E-05
					Benzo(b)fluoranthene	1.74E-09	lbs/hp-hr	3.05E-08
					Benzo(e)pyrene	4.36E-09	lbs/hp-hr	7.63E-08
					Benzo(g,h,i)perylene	4.35E-09	lbs/hp-hr	7.61E-08
					Biphenyl	2.23E-06	lbs/hp-hr	3.90E-05
					Carbon Tetrachloride	3.85E-07	lbs/hp-hr	6.74E-06
					Chlorobenzene	3.19E-07	lbs/hp-hr	5.59E-06
					Chloroethane	1.96E-08	lbs/hp-hr	3.44E-07
					Chloroform	2.99E-07	lbs/hp-hr	5.24E-06
					Chrysene	7.28E-09	lbs/hp-hr	1.27E-07
					Ethylbenzene	4.17E-07	lbs/hp-hr	7.29E-06
					Ethylene Dibromide	4.65E-07	lbs/hp-hr	8.14E-06
					Fluoranthene	1.17E-08	lbs/hp-hr	2.04E-07
					Fluorene	5.95E-08	lbs/hp-hr	1.04E-06

Table 14a. Facility Hazardous Air Pollutant (HAP) Emissions - PTE Calculations

Unit ID	Process Code	Non-Fug. (NF) / Fug. (F)	Process Rate	Rate Units	HAP Information			Emissions (tpy)
					Name	EF	EF Units	
					Formaldehyde	5.54E-04	lbs/hp-hr	9.70E-03
					Methanol	2.63E-05	lbs/hp-hr	4.59E-04
					Methylene Chloride	2.10E-07	lbs/hp-hr	3.68E-06
					n-Hexane	1.17E-05	lbs/hp-hr	2.04E-04
					Naphthalene	7.81E-07	lbs/hp-hr	1.37E-05
					PAH	2.82E-07	lbs/hp-hr	4.94E-06
					Phenanthrene	1.09E-07	lbs/hp-hr	1.91E-06
					Phenol	2.52E-07	lbs/hp-hr	4.41E-06
					Pyrene	1.43E-08	lbs/hp-hr	2.50E-07
					Styrene	2.48E-07	lbs/hp-hr	4.34E-06
					Tetrachloroethane	2.60E-08	lbs/hp-hr	4.56E-07
					Toluene	4.28E-06	lbs/hp-hr	7.50E-05
					Vinyl Chloride	1.56E-07	lbs/hp-hr	2.74E-06
					Xylene	1.93E-06	lbs/hp-hr	3.38E-05
					Total HAPs	-	-	1.33E-02
Natural Gas Engine Driven Generator (675 hp Engine)	NGGen	NF	337,500	hp-hrs	1,1,2,2-Tetrachloroethane	4.20E-07	lbs/hp-hr	7.09E-05
					1,1,2-Trichloroethane	3.34E-07	lbs/hp-hr	5.63E-05
					1,1-Dichloroethane	2.48E-07	lbs/hp-hr	4.18E-05
					1,2-Dichloroethane	2.48E-07	lbs/hp-hr	4.18E-05
					1,2-Dichloropropane	2.82E-07	lbs/hp-hr	4.77E-05
					1,3-Butadiene	2.80E-06	lbs/hp-hr	4.73E-04
					1,3-Dichloropropene	2.77E-07	lbs/hp-hr	4.68E-05
					2-Methylnaphthalene	3.49E-07	lbs/hp-hr	5.88E-05
					2,2,4-Trimethylpentane	2.63E-06	lbs/hp-hr	4.43E-04
					Acenaphthene	1.31E-08	lbs/hp-hr	2.21E-06
					Acenaphthylene	5.81E-08	lbs/hp-hr	9.80E-06
					Acetaldehyde	8.78E-05	lbs/hp-hr	1.48E-02
					Acrolein	5.40E-05	lbs/hp-hr	9.11E-03
					Benzene	4.62E-06	lbs/hp-hr	7.80E-04
					Benzo(b)fluoranthene	1.74E-09	lbs/hp-hr	2.94E-07
					Benzo(e)pyrene	4.36E-09	lbs/hp-hr	7.35E-07
					Benzo(g,h,i)perylene	4.35E-09	lbs/hp-hr	7.34E-07
					Biphenyl	2.23E-06	lbs/hp-hr	3.76E-04
					Carbon Tetrachloride	3.85E-07	lbs/hp-hr	6.50E-05
					Chlorobenzene	3.19E-07	lbs/hp-hr	5.39E-05
					Chloroethane	1.96E-08	lbs/hp-hr	3.31E-06
					Chloroform	2.99E-07	lbs/hp-hr	5.05E-05
					Chrysene	7.28E-09	lbs/hp-hr	1.23E-06
					Ethylbenzene	4.17E-07	lbs/hp-hr	7.03E-05
					Ethylene Dibromide	4.65E-07	lbs/hp-hr	7.85E-05
					Fluoranthene	1.17E-08	lbs/hp-hr	1.97E-06
					Fluorene	5.95E-08	lbs/hp-hr	1.00E-05
					Formaldehyde	5.54E-04	lbs/hp-hr	9.36E-02
					Methanol	2.63E-05	lbs/hp-hr	4.43E-03
					Methylene Chloride	2.10E-07	lbs/hp-hr	3.54E-05
					n-Hexane	1.17E-05	lbs/hp-hr	1.97E-03
					Naphthalene	7.81E-07	lbs/hp-hr	1.32E-04
					PAH	2.82E-07	lbs/hp-hr	4.77E-05
					Phenanthrene	1.09E-07	lbs/hp-hr	1.84E-05
					Phenol	2.52E-07	lbs/hp-hr	4.25E-05
					Pyrene	1.43E-08	lbs/hp-hr	2.41E-06
					Styrene	2.48E-07	lbs/hp-hr	4.18E-05
					Tetrachloroethane	2.60E-08	lbs/hp-hr	4.39E-06
					Toluene	4.28E-06	lbs/hp-hr	7.23E-04
					Vinyl Chloride	1.56E-07	lbs/hp-hr	2.64E-05
					Xylene	1.93E-06	lbs/hp-hr	3.26E-04
					Total HAPs	-	-	1.28E-01
All Natural Gas-Fired Heating Equipment: Bunker C Boiler, Heating Boiler, D4-RM1-HTR, Separator Heaters. Direct-Fired Heaters, Elevator Heaters, Comfort Heating.	NatGas	NF	861,599	MMBtus	Lead	4.90E-07	lbs/MMBtu	2.11E-04
					2-Methylnaphthalene	2.35E-08	lbs/MMBtu	1.01E-05
					3-Methylchloranthrene	1.76E-09	lbs/MMBtu	7.60E-07
					7,12-Dimethylbenz(a)anthracene	1.57E-08	lbs/MMBtu	6.76E-06
					Acenaphthene	1.76E-09	lbs/MMBtu	7.60E-07
					Acenaphthylene	1.76E-09	lbs/MMBtu	7.60E-07
					Anthracene	2.35E-09	lbs/MMBtu	1.01E-06
					Benz(a)anthracene	1.76E-09	lbs/MMBtu	7.60E-07
					Benzene	2.06E-06	lbs/MMBtu	8.87E-04
					Benzo(a)pyrene	1.18E-09	lbs/MMBtu	5.07E-07
					Benzo(b)fluoranthene	1.76E-09	lbs/MMBtu	7.60E-07
					Benzo(g,h,i)perylene	1.18E-09	lbs/MMBtu	5.07E-07
					Benzo(k)fluoranthene	1.76E-09	lbs/MMBtu	7.60E-07
					Chrysene	1.76E-09	lbs/MMBtu	7.60E-07
					Dibenz(a,h)anthracene	1.18E-09	lbs/MMBtu	5.07E-07
					Dichlorobenzene	1.18E-06	lbs/MMBtu	5.07E-04
					Fluoranthene	2.94E-09	lbs/MMBtu	1.27E-06
					Fluorene	2.75E-09	lbs/MMBtu	1.18E-06
					Formaldehyde	7.35E-05	lbs/MMBtu	3.17E-02
					Hexane	1.76E-03	lbs/MMBtu	7.60E-01
					Indeno(1,2,3-cd)pyrene	1.76E-09	lbs/MMBtu	7.60E-07
					Naphthalene	5.98E-07	lbs/MMBtu	2.58E-04
					Phenanthrene	1.67E-08	lbs/MMBtu	7.18E-06
					Pyrene	4.90E-09	lbs/MMBtu	2.11E-06
					Toluene	3.33E-06	lbs/MMBtu	1.44E-03
					Arsenic	1.96E-07	lbs/MMBtu	8.45E-05
					Beryllium	1.18E-08	lbs/MMBtu	5.07E-06
					Cadmium	1.08E-06	lbs/MMBtu	4.65E-04
					Chromium	1.37E-06	lbs/MMBtu	5.91E-04
					Cobalt	8.24E-08	lbs/MMBtu	3.55E-05
					Manganese	3.73E-07	lbs/MMBtu	1.60E-04
					Mercury	2.55E-07	lbs/MMBtu	1.10E-04
					Nickel	2.06E-06	lbs/MMBtu	8.87E-04
					Selenium	2.35E-08	lbs/MMBtu	1.01E-05
					Total HAPs	-	-	7.98E-01
Tier 4 Diesel Engine (kW > 560)	Agg-Gen	NF	13,140,000	hp-hr	Benzene	5.43E-06	lbs/hp-hr	3.57E-02
					Toluene	1.97E-06	lbs/hp-hr	1.29E-02
					Xylenes	1.35E-06	lbs/hp-hr	8.88E-03
					Formaldehyde	5.52E-07	lbs/hp-hr	3.63E-03
					Acetaldehyde	1.76E-07	lbs/hp-hr	1.16E-03
					Acrolein	5.52E-08	lbs/hp-hr	3.62E-04
					Naphthalene	9.10E-07	lbs/hp-hr	5.98E-03
					Acenaphthylene	6.46E-08	lbs/hp-hr	4.24E-04
					Acenaphthene	3.28E-08	lbs/hp-hr	2.15E-04
					Fluorene	8.96E-08	lbs/hp-hr	5.89E-04
					Phenanthrene	2.86E-07	lbs/hp-hr	1.88E-03
					Anthracene	8.61E-09	lbs/hp-hr	5.66E-05
					Fluoranthene	2.82E-08	lbs/hp-hr	1.85E-04
					Pyrene	2.60E-08	lbs/hp-hr	1.71E-04
					Benzo(a)anthracene	4.35E-09	lbs/hp-hr	2.86E-05
					Chrysene	1.07E-08	lbs/hp-hr	7.04E-05
					Benzo(b)fluoranthene	7.77E-09	lbs/hp-hr	5.10E-05
					Benzo(k)fluoranthene	1.53E-09	lbs/hp-hr	1.00E-05
					Benzo(a)pyrene	1.80E-09	lbs/hp-hr	1.18E-05

Table 14a. Facility Hazardous Air Pollutant (HAP) Emissions - PTE Calculations

Unit ID	Process Code	Non-Fug. (NF) / Fug. (F)	Process Rate	Rate Units	HAP Information			Emissions (tpy)
					Name	EF	EF Units	
					Indeno(1,2,3-cd)pyrene	2.90E-09	lbs/hp-hr	1.90E-05
					Dibenz(a,h)anthracene	2.42E-09	lbs/hp-hr	1.59E-05
					Benzo(g,h,i)perylene	3.89E-09	lbs/hp-hr	2.56E-05
					Total HAPs	-	-	7.24E-02
Material Transfers								
Cement Imports - Transfer To Storage Silos	Cement	NF	250,000	tons	Arsenic	4.24E-09	lbs/ton	5.30E-07
					Beryllium	4.86E-10	lbs/ton	6.08E-08
					Chromium	2.90E-08	lbs/ton	3.63E-06
					Lead	1.09E-08	lbs/ton	1.36E-06
					Manganese	1.17E-07	lbs/ton	1.46E-05
					Nickel	4.18E-08	lbs/ton	5.23E-06
					Total HAPs	-	-	2.54E-05
Cement Exports - Transfer From Storage Silos	Cement	NF	4,471,265	tons	Arsenic	4.24E-09	lbs/ton	9.48E-06
					Beryllium	4.86E-10	lbs/ton	1.09E-06
					Chromium	2.90E-08	lbs/ton	6.48E-05
					Lead	1.09E-08	lbs/ton	2.44E-05
					Manganese	1.17E-07	lbs/ton	2.62E-04
					Nickel	4.18E-08	lbs/ton	9.34E-05
					Total HAPs	-	-	4.55E-04
Material Transfer of Flyash	MinFly	NF	11,777	tons	Arsenic	1.00E-06	lbs/ton	5.89E-06
					Beryllium	9.04E-08	lbs/ton	5.32E-07
					Cadmium	1.98E-10	lbs/ton	1.17E-09
					Chromium	1.22E-06	lbs/ton	7.18E-06
					Lead	5.20E-07	lbs/ton	3.06E-06
					Manganese	2.56E-07	lbs/ton	1.51E-06
					Nickel	2.28E-06	lbs/ton	1.34E-05
					Phosphorus	3.54E-06	lbs/ton	2.08E-05
					Selenium	7.24E-08	lbs/ton	4.26E-07
					Total HAPs	-	-	5.29E-05
Storage Tanks								
Diesel Fuel Aboveground Storage Tank at Quarry - 50,000 Gallons	DieselAST50K	NF	8,760	hrs	n-Hexane	2.28E-06	lbs/hr	1.00E-05
					Benzene	6.85E-06	lbs/hr	3.00E-05
					Toluene	7.76E-05	lbs/hr	3.40E-04
					Ethylbenzene	1.14E-05	lbs/hr	5.00E-05
					Xylene (-m)	2.00E-04	lbs/hr	8.75E-04
					Total HAPs	-	-	1.31E-03
12,000-Gallon Diesel Aboveground Storage Tank at Plant	DieselAST12K	NF	8,760	hrs	n-Hexane	0.00E+00	lbs/hr	0.00E+00
					Benzene	2.28E-06	lbs/hr	1.00E-05
					Toluene	1.94E-05	lbs/hr	8.50E-05
					Ethylbenzene	2.28E-06	lbs/hr	1.00E-05
					Xylene (-m)	4.91E-05	lbs/hr	2.15E-04
					Total HAPs	-	-	3.20E-04
On-Spec Used Oil Aboveground Storage Tank - 31,000 Gallons	OSUOAST31K	NF	8,760	hrs	Total HAPs	2.05E-05	lbs/hr	9.00E-05
On-Spec Used Oil Aboveground Storage Tank - 28,700 Gallons	OSUAAST28K	NF	8,760	hrs	Total HAPs	1.83E-05	lbs/hr	8.00E-05
On-Spec Used Oil Aboveground Storage Tank - 28,700 Gallons	OSUAAST28K	NF	8,760	hrs	Total HAPs	1.83E-05	lbs/hr	8.00E-05
2,000-Gallon Gasoline Aboveground Storage Tank	GasAST2000	NF	8,760	hrs	Benzene	6.96E-04	lbs/hr	3.05E-03
					Ethylbenzene	5.48E-05	lbs/hr	2.40E-04
					Hexane (-n)	6.21E-04	lbs/hr	2.72E-03
					Isooctane	0.00E+00	lbs/hr	0.00E+00
					Isopropyl Benzene	7.99E-06	lbs/hr	3.50E-05
					Toluene	7.97E-04	lbs/hr	3.49E-03
					Xylene (-m)	2.31E-04	lbs/hr	1.01E-03
					Total HAPs	-	-	1.05E-02
Lube Oil Aboveground Storage Tank - 1,000 Gallons	LubeAST1000	NF	8,760	hrs	Total HAPs	1.14E-06	lbs/hr	5.00E-06
Lube Oil Aboveground Storage Tank - 1,000 Gallons	LubeAST1000	NF	8,760	hrs	Total HAPs	1.14E-06	lbs/hr	5.00E-06
Lube Oil Aboveground Storage Tank - 1,000 Gallons	LubeAST1000	NF	8,760	hrs	Total HAPs	1.14E-06	lbs/hr	5.00E-06
Lube Oil Aboveground Storage Tank - 1,000 Gallons	LubeAST1000	NF	8,760	hrs	Total HAPs	1.14E-06	lbs/hr	5.00E-06
Lube Oil Aboveground Storage Tank - 1,000 Gallons	LubeAST1000	NF	8,760	hrs	Total HAPs	1.14E-06	lbs/hr	5.00E-06
Lube Oil Aboveground Storage Tank - 1,000 Gallons	LubeAST1000	NF	8,760	hrs	Total HAPs	1.14E-06	lbs/hr	5.00E-06
Lube Oil Aboveground Storage Tank - 1,000 Gallons	LubeAST1000	NF	8,760	hrs	Total HAPs	1.14E-06	lbs/hr	5.00E-06
Used Oil Aboveground Storage Tank - 2,000 Gallons	OilAST2000	NF	8,760	hrs	Total HAPs	1.14E-06	lbs/hr	5.00E-06
Used Oil Aboveground Storage Tank - 2,000 Gallons	OilAST2000	NF	8,760	hrs	Total HAPs	1.14E-06	lbs/hr	5.00E-06
							Max Single HAP (HCl):	**101.78**
							Lead and Lead Compounds Emissions:	**0.05**
							Non-Fugitive Total HAPs Emissions:	**135.06**
							Fugitive Total HAPs Emissions:	**0.0014**
							Total HAPs	**135.06**

APPENDIX B. PERMIT REDLINE

CLASS I AIR QUALITY PERMIT

PERMIT No. 85424 (As Revised by Minor Permit Revision No. 113625)

PERMITTEE:	**CalPortland Company**
FACILITY:	**CalPortland – Rillito Cement Plant**
PLACE ID:	**2869**
DATE ISSUED:	**March 3, 2021 (As Revised on April 9, 2026)**
EXPIRY DATE:	**March 2, 2026**

SUMMARY

This Class I air quality permit is issued to CalPortland Company, the Permittee, for the continued operation of a portland cement plant including a quarry / crushing and screening plant. The facility is located at 11115 N. Casa Grande Highway, Rillito, AZ 85654. This permit renews and supersedes Permit No. 61522.

The Rillito Cement Plant is comprised of a limestone quarry, a portland cement manufacturing plant, and the Twin Peaks Rock and Stone Aggregate Plant as well as other supporting operations. The Rillito Cement Plant produces portland cement as the primary product with aggregate as a secondary product. The nominal design rate for Kiln 4 is 207 tons per hour (tph) of clinker and 264 tph for the Rillito facility (all four kilns combined). The facility operates continuously for 24 hours per day and 365 days per year.

The facility has the potential to emit particulate matter (PM), particulate matter less than 10 microns (PM_{10}), nitrogen oxides (NO_X), carbon monoxide (CO), sulfur dioxide (SO_2) and total hazardous air pollutants (HAPs) greater than the major source thresholds. Thus, the facility is classified as a major source as defined in the Arizona Administrative Code (A.A.C.) R18-2-101(75), and requires a Class I permit in accordance with A.A.C. R18-2-302. B.1.a.

This permit is issued in accordance with Arizona Revised Statutes (A.R.S.) § 49-426. It contains requirements from Title 18, Chapter 2 of the A.A.C. and Title 40 of the Code of Federal Regulations (CFR). All definitions, terms, and conditions used in this permit conform to those in the Arizona Administrative Code R18-2-101 et. seq. (A.A.C.) and Title 40 of the CFR, except as otherwise defined in this permit.

Minor Permit Revision (MPR) No. 113625

This Class I Minor Permit Revision (MPR) No. 113625 to Operating Permit No. 85424 authorizes CalPortland Company, the Permittee, to replace the current alternative fuel hopper and associated screw feeder with a new feed hopper and belt feeder for Kiln 4. The increase in emissions from the proposed changes are less than the significant level thresholds. Therefore, the change meets the requirements for an MPR as outlined in the A.A.C. R18-2-319.

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ATTACHMENT "A": GENERAL PROVISIONS

I. PERMIT EXPIRATION AND RENEWAL

A. This permit is valid for a period of five (5) years from the date of issuance.
[A.R.S. § 49-426.F, A.A.C. R18-2-306.A.1]

B. The Permittee shall submit an application for renewal of this permit at least six (6) months, but not more than eighteen (18) months, prior to the date of permit expiration.
[A.A.C. R18-2-304.D.2]

II. COMPLIANCE WITH PERMIT CONDITIONS

A. The Permittee shall comply with all conditions of this permit including all applicable requirements of the Arizona Revised Statutes (A.R.S.) Title 49, Chapter 3, and the air quality rules under Title 18, Chapter 2 of the Arizona Administrative Code. Any permit noncompliance is grounds for enforcement action; for permit termination, revocation and reissuance, revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.
[A.A.C. R18-2-306.A.8.a]

B. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
[A.A.C. R18-2-306.A.8.b]

III. PERMIT REVISION, REOPENING, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE

A. The permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
[A.A.C. R18-2-306.A.8.c]

B. The permit shall be reopened and revised under any of the following circumstances:

1. Additional applicable requirements under the Clean Air Act become applicable to the Class I source. Such a reopening shall only occur if there are three or more years remaining in the permit term. The reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of it terms and conditions has been extended pursuant to A.A.C. R18-2-322.B. Any permit revision required pursuant to this subparagraph shall comply with the provisions in A.A.C. R18-2-322 for permit renewal and shall reset the five-year permit term;
[A.A.C. R18-2-321.A.1.a]

2. Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the Class I permit;

[A.A.C. R18-2-321.A.1.b]

3. The Director or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; and

[A.A.C. R18-2-321.A.1.c]

4. The Director or the Administrator determines that the permit needs to be revised or revoked to assure compliance with the applicable requirements.

[A.A.C. R18-2-321.A.1.d]

C. Proceedings to reopen and issue a permit, including appeal of any final action relating to a permit reopening, shall follow the same procedures as apply to initial permit issuance and shall, except for reopenings under Condition III.B.1 above, affect only those parts of the permit for which cause to reopen exists. Such reopening shall be made as expeditiously as practicable. Permit reopenings for reasons other than those stated in Condition III.B.1 above shall not result in a resetting of the five-year permit term.

[A.A.C. R18-2-321.A.2]

IV. POSTING OF PERMIT

A. The Permittee shall post this permit or a certificate of permit issuance at the facility in such a manner as to be clearly visible and accessible. All equipment covered by this permit shall be clearly marked with one of the following:

[A.A.C. R18-2-315.A]

1. Current permit number; or

2. Serial number or other equipment identification number (equipment ID number) that is also listed in the permit to identify that piece of equipment.

B. A copy of the complete permit shall be kept on site.

[A.A.C. R18-2-315.B]

V. FEE PAYMENT

The Permittee shall pay fees to the Director pursuant to A.R.S. § 49-426(E) and A.A.C. R18-2-326.

[A.A.C. R18-2-306.A.9 and -326]

VI. ANNUAL EMISSION INVENTORY QUESTIONNAIRE

A. The Permittee shall complete and submit to the Director an annual emissions inventory questionnaire. The questionnaire is due by March 31st or ninety (90) days after the Director makes the inventory form available each year, whichever occurs later, and shall include emission information for the previous calendar year.

[A.A.C. R18-2-327.A]

B. The questionnaire shall be on a form provided by the Director and shall include the information required by A.A.C. R18-2-327.B.

[A.A.C. R18-2-327.B]

VII. COMPLIANCE CERTIFICATION

A. The Permittee shall submit a compliance certification to the Director semiannually, which describes the compliance status of the source with respect to each permit condition. The first certification shall be submitted no later than May 15th, and shall report the compliance status of the source during the period between October 1st of the previous year and March 31st of the current year. The second certification shall be submitted no later than November 15th, and shall report the compliance status of the source during the period between April 1st and September 30th of the current year.

[A.A.C. R18-2-309.2.a]

B. The compliance certifications shall include the following:

1. Identification of each term or condition of the permit that is the basis of the certification;

[A.A.C. R18-2-309.2.c.i]

2. Identification of the methods or other means used by the Permittee for determining the compliance status with each term and condition during the certification period,

[A.A.C. R18-2-309.2c.ii]

3. Status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certifications shall identify each deviation (including any deviations reported pursuant to Condition XI.B of this Attachment) during the period covered by the certification and take it into account for consideration in the compliance certification;

[A.A.C. R18-2-309.2.c.iii]

4. For emission units subject to 40 CFR Part 64, the certification shall also identify as possible exceptions to compliance any period during which compliance is required and in which an excursion or exceedance defined under 40 CFR Part 64 occurred;

[A.A.C. R18-2-309.2.c.iii]

5. Other facts the Director may require to determine the compliance status of the source.

[A.A.C. R18-2-309.2.c.iv]

C. A copy of all compliance certifications shall also be submitted to the EPA Administrator.

[A.A.C. R18-2-309.2.d]

D. If any outstanding compliance schedule exists, a progress report shall be submitted with the semi-annual compliance certifications required in Condition VII.A above. The progress reports shall contain the information required by A.A.C R18-2-309.5.d.

[A.A.C. R18-2-309.5.d]

VIII. CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS

Any document required to be submitted by this permit, including reports, shall contain a certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

[A.A.C. R18-2-309.3]

IX. INSPECTION AND ENTRY

Upon presentation of proper credentials, the Permittee shall allow the Director or the authorized representative of the Director to:

A. Enter upon the Permittee's premises where a source is located, emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;

[A.A.C. R18-2-309.4.a]

B. Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;

[A.A.C. R18-2-309.4.b]

C. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;

[A.A.C. R18-2-309.4.c]

D. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and

[A.A.C. R18-2-309.4.d]

E. Record any inspection by use of written, electronic, magnetic and photographic media.

[A.A.C. R18-2-309.4.e]

X. ACCIDENTAL RELEASE PROGRAM

If this source becomes subject to the provisions of 40 CFR Part 68, then the Permittee shall comply with these provisions according to the time line specified in 40 CFR Part 68.

[40 CFR Part 68]

XI. EXCESS EMISSIONS, PERMIT DEVIATIONS, AND EMERGENCY REPORTING

A. Excess Emissions Reporting

[A.A.C. R18-2-310.01.A, B, and C]

1. Excess emissions shall be reported as follows:

   a. The Permittee shall report to the Director any emissions in excess of the limits established by this permit. Such report shall be in two parts as specified below:

(1) Notification by telephone or facsimile within 24 hours of the time when the Permittee first learned of the occurrence of excess emissions including all available information from Condition XI.A.1.b below.

(2) Detailed written notification by submission of an excess emissions report within 72 hours of the notification pursuant to Condition XI.A.1.a(1) above.

[A.A.C. R18-2-310.01.A]

b. The report shall contain the following information:

(1) Identity of each stack or other emission point where the excess emissions occurred;

[A.A.C. R18-2-310.01.B.1]

(2) Magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;

[A.A.C. R18-2-310.01.B.2]

(3) Time and duration, or expected duration, of the excess emissions;

[A.A.C. R18-2-310.01.B.3]

(4) Identity of the equipment from which the excess emissions emanated;

[A.A.C. R18-2-310.01.B.4]

(5) Nature and cause of such emissions;

[A.A.C. R18-2-310.01.B.5]

(6) If the excess emissions were the result of a malfunction, steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunctions;

[A.A.C. R18-2-310.01.B.6]

(7) Steps that were or are being taken to limit the excess emissions; and

[A.A.C. R18-2-310.01.B.7]

(8) If the excess emissions resulted from startup or malfunction, the report shall contain a list of the steps taken to comply with any permit procedures governing source operation during periods of startup or malfunction.

[A.A.C. R18-2-310.01.B.8]

2. In the case of continuous or recurring excess emissions, the notification requirements shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in such notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the

estimated time period, or changes in the nature of the emissions as originally reported, shall require additional notification pursuant to Condition XI.A.1 above.
[A.A.C. R18-2-310.01.C]

B. Permit Deviations Reporting

The Permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. Where the applicable requirement contains a definition of prompt or otherwise specifies a timeframe for reporting deviations, that definition or timeframe shall govern. Where the applicable requirement does not address the timeframe for reporting deviations, the Permittee shall submit reports of deviations according to the following schedule:

1. Notice that complies with Condition XI.A.1 above is prompt for deviations that constitute excess emissions;
[A.A.C. R18-2-306.A.5.b.i]

2. Notice that is submitted within two working days of discovery of the deviation is prompt for deviations of permit conditions identified by Condition I.B.2 of Attachment "B";
[A.A.C. R18-2-306.A.5.b.ii]

3. Except as provided in Conditions XI.B.1 and 2 above, prompt notification of all other types of deviations shall be every 6 months, concurrent with the semiannual compliance certifications required in Section VII, and can be submitted via the "Annual/Semiannual Deviation Monitoring Report" form available on the Arizona Department of Environmental Quality Website.
[A.A.C. R18-2-306.A.5.b.ii]

C. Emergency Provision

1. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, that require immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.
[A.A.C. R18-2-306.E.1]

2. An emergency constitutes an affirmative defense to an action brought for noncompliance with technology-based emission limitations if Condition XI.C.3 below is met.
[A.A.C. R18-2-306.E.2]

3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:
[A.A.C. R18-2-306.E.3]

a. An emergency occurred and that the Permittee can identify the cause(s) of the emergency;

[A.A.C. R18-2-306.E.3.a]

b. The permitted facility was being properly operated at the time of the emergency;

[A.A.C. R18-2-306.E.3.b]

c. During the period of the emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and

[A.A.C. R18-2-306.E.3.c]

d. The Permittee submitted notice of the emergency to the Director by certified mail, facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.

[A.A.C. R18-2-306.E.3.d]

4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

[A.A.C. R18-2-306.E.4]

5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

[A.A.C. R18-2-306.E.5]

D. Compliance Schedule

For any excess emission or permit deviation that cannot be corrected within 72 hours, the Permittee is required to submit a compliance schedule to the Director within 21 days of such occurrence. The compliance schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with the permit terms or conditions that have been violated.

[ARS § 49-426.I.3]

E. Affirmative Defenses for Excess Emissions Due to Malfunctions, Startup, and Shutdown

1. Applicability

A.A.C. R18-2-310 establishes affirmative defenses for certain emissions in excess of an emission standard or limitation and applies to all emission standards or limitations except for standards or limitations:

a. Promulgated pursuant to Sections 111 or 112 of the Act;

[A.A.C. R18-2-310.A.1]

b. Promulgated pursuant to Titles IV or VI of the Clean Air Act;

[A.A.C. R18-2-310.A.2]

c. Contained in any Prevention of Significant Deterioration (PSD) or New Source Review (NSR) permit issued by the U.S. EPA;
[A.A.C. R18-2-310.A.3]

d. Contained in A.A.C. R18-2-715.F; or
[A.A.C. R18-2-310.A.4]

e. Included in a permit to meet the requirements of A.A.C. R18-2-406.A.5.
[A.A.C. R18-2-310.A.5]

2. Affirmative Defense for Malfunctions

Emissions in excess of an applicable emission limitation due to malfunction shall constitute a violation. When emissions in excess of an applicable emission limitation are due to a malfunction, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:
[A.A.C. R18-2-310.B]

a. The excess emissions resulted from a sudden and unavoidable breakdown of process equipment or air pollution control equipment beyond the reasonable control of the Permittee;
[A.A.C. R18-2-310.B.1]

b. The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
[A.A.C. R18-2-310.B.2]

c. If repairs were required, the repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized where practicable to ensure that the repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, the Permittee satisfactorily demonstrated that the measures were impracticable;
[A.A.C. R18-2-310.B.3]

d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
[A.A.C. R18-2-310.B.4]

e. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
[A.A.C. R18-2-310.B.5]

f. The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;
[A.A.C. R18-2-310.B.6]

g. During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;

[A.A.C. R18-2-310.B.7]

h. The excess emissions did not stem from any activity or event that could have been foreseen and avoided, or planned, and could not have been avoided by better operations and maintenance practices;

[A.A.C. R18-2-310.B.8]

i. All emissions monitoring systems were kept in operation if at all practicable; and

[A.A.C. R18-2-310.B.9]

j. The Permittee's actions in response to the excess emissions were documented by contemporaneous records.

[A.A.C. R18-2-310.B.10]

3. Affirmative Defense for Startup and Shutdown

a. Except as provided in Condition XI.E.3.b below, and unless otherwise provided for in the applicable requirement, emissions in excess of an applicable emission limitation due to startup and shutdown shall constitute a violation. When emissions in excess of an applicable emission limitation are due to startup and shutdown, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:

[A.A.C. R18-2-310.C.1]

(1) The excess emissions could not have been prevented through careful and prudent planning and design;

[A.A.C. R18-2-310.C.1.a]

(2) If the excess emissions were the result of a bypass of control equipment, the bypass was unavoidable to prevent loss of life, personal injury, or severe damage to air pollution control equipment, production equipment, or other property;

[A.A.C. R18-2-310.C.1.b]

(3) The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;

[A.A.C. R18-2-310.C.1.c]

(4) The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;

[A.A.C. R18-2-310.C.1.d]

(5) All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;

[A.A.C. R18-2-310.C.1.e]

(6) During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;

[A.A.C. R18-2-310.C.1.f]

(7) All emissions monitoring systems were kept in operation if at all practicable; and

[A.A.C. R18-2-310.C.1.g]

(8) Contemporaneous records documented the Permittee's actions in response to the excess emissions.

[A.A.C. R18-2-310.C.1.h]

b. If excess emissions occur due to a malfunction during routine startup and shutdown, then those instances shall be treated as other malfunctions subject to Condition XI.E.2 above.

[A.A.C. R18-2-310.C.2]

4. Affirmative Defense for Malfunctions during Scheduled Maintenance

If excess emissions occur due to a malfunction during scheduled maintenance, then those instances will be treated as other malfunctions subject to Condition XI.E.2 above.

[A.A.C. R18-2-310.D]

5. Demonstration of Reasonable and Practicable Measures

For an affirmative defense under Condition XI.E.2 or XI.E.3, the Permittee shall demonstrate, through submission of the data and information required by this Condition XI.E and Condition XI.A.1 above, that all reasonable and practicable measures within the Permittee's control were implemented to prevent the occurrence of the excess emissions.

[A.A.C. R18-2-310.E]

XII. RECORDKEEPING REQUIREMENTS

A. The Permittee shall keep records of all required monitoring information including, but not limited to, the following:

[A.A.C. R18-2-306.A.4.a]

1. The date, place as defined in the permit, and time of sampling or measurements;

[A.A.C. R18-2-306.A.4.a.i]

2. The date(s) any analyses were performed;

[A.A.C. R18-2-306.A.4.a.ii]

3. The name of the company or entity that performed the analyses;
[A.A.C. R18-2-306.A.4.a.iii]

4. A description of the analytical techniques or methods used;
[A.A.C. R18-2-306.A.4.a.iv]

5. The results of analyses; and
[A.A.C. R18-2-306.A.4.a.v]

6. The operating conditions as existing at the time of sampling or measurement.
[A.A.C. R18-2-306.A.4.a.vi]

B. The Permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings or other data recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.
[A.A.C. R18-2-306.A.4.b]

XIII. REPORTING REQUIREMENTS

The Permittee shall submit the following reports:

A. Compliance certifications in accordance with Section VII above.
[A.A.C. R18-2-306.A.5.a]

B. Excess emission; permit deviation, and emergency reports in accordance with Section XI above.
[A.A.C. R18-2-306.A.5.b]

C. Other reports required by any condition of Attachment "B".

XIV. DUTY TO PROVIDE INFORMATION

A. The Permittee shall furnish to the Director, within a reasonable time, any information that the Director may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Director copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee shall furnish an additional copy of such records directly to the EPA Administrator along with a claim of confidentiality.
[A.A.C. R18-2-304.G and -306.A.8.e]

B. If the Permittee has failed to submit any relevant facts or has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.
[A.A.C. R18-2-304.H]

XV. PERMIT AMENDMENT OR REVISION

The Permittee shall apply for a permit amendment or revision for changes to the facility which do not qualify for a facility change without revision under Section XVI below, as follows:

A. Administrative Permit Amendment;

[A.A.C. R18-2-318]

B. Minor Permit Revision; and

[A.A.C. R18-2-319]

C. Significant Permit Revision

[A.A.C. R18-2-320]

D. The applicability and requirements for such action are defined in the above referenced regulations.

XVI. FACILITY CHANGE WITHOUT A PERMIT REVISION

A. The Permittee may make changes that contravene an express permit term without a permit revision if all of the following apply:

1. The changes are not modifications under any provision of Title I of the Act or under A.R.S. § 49-401.01(24);

[A.A.C. R18-2-317.A.1]

2. The changes do not exceed the emissions allowable under the permit whether expressed therein as a rate of emissions or in terms of total emissions;

[A.A.C. R18-2-317.A.2]

3. The changes do not violate any applicable requirements or trigger any additional applicable requirements;

[A.A.C. R18-2-317.A.3]

4. The changes satisfy all requirements for a minor permit revision under A.A.C. R18-2-319.A;

[A.A.C. R18-2-317.A.4]

5. The changes do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), record keeping, reporting, or compliance certification requirements; and

[A.A.C. R18-2-317.A.5]

6. The changes do not constitute a minor NSR modification.

[A.A.C. R18-2-317.A.6]

B. The substitution of an item of process or pollution control equipment for an identical or substantially similar item of process or pollution control equipment shall qualify as a change that does not require a permit revision, if it meets all of the requirements of Conditions XVI.A, C, and D of this Attachment.

[A.A.C. R18-2-317.B]

C. For each change under Conditions XVI.A and XVI.B above, a written notice by certified mail or hand delivery shall be received by the Director and the EPA Administrator a minimum of 7 working days in advance of the change. Notifications of changes associated with emergency conditions, such as malfunctions necessitating the replacement of equipment, may be provided less than 7 working days in advance of the change, but must be provided as far in advance of the change~~,~~ as possible or, if advance notification is not practicable, as soon after the change as possible.

[A.A.C. R18-2-317.D]

D. Each notification shall include:

1. When the proposed change will occur;

[A.A.C. R18-2-317.E.1]

2. A description of the change;

[A.A.C. R18-2-317.E.2]

3. Any change in emissions of regulated air pollutants; and

[A.A.C. R18-2-317.E.3]

4. Any permit term or condition that is no longer applicable as a result of the change.

[A.A.C. R18-2-317.E.7]

E. The permit shield described in A.A.C. R18-2-325 shall not apply to any change made under this Section XVI.

[A.A.C. R18-2-317.F]

F. Except as otherwise provided for in the permit, making a change from one alternative operating scenario to another as provided under A.A.C. R18-2-306.A.11 shall not require any prior notice under this Section XVI.

[A.A.C. R18-2-317.G]

G. Notwithstanding any other part of Section XVI, the Director may require a permit to be revised for any change that, when considered together with any other changes submitted by the same source under Section XVI over the term of the permit, do not satisfy Condition XVI.A above.

[A.A.C. R18-2-317.H]

XVII. TESTING REQUIREMENTS

A. Except as provided in Condition XVII.F below, the Permittee shall conduct performance tests as specified in the permit and at such other times as may be required by the Director.

[A.A.C. R18-2-312.A]

B. Operational Conditions during Performance Testing

Performance tests shall be conducted under such conditions as the Director shall specify to the plant operator based on representative performance of the source. The Permittee shall make available to the Director such records as may be necessary to determine the conditions of the performance tests. Operations during periods of start-up, shutdown, and

malfunction (as defined in A.A.C. R18-2-101) shall not constitute representative conditions of performance tests unless otherwise specified in the applicable standard.

[A.A.C. R18-2-312.C]

C. Performance Tests shall be conducted and data reduced in accordance with the test methods and procedures contained in the Arizona Testing Manual unless modified by the Director pursuant to A.A.C. R18-2-312.B.

[A.A.C. R18-2-312.B]

D. Test Plan

At least 14 working days prior to performing a test, the Permittee shall submit a test plan to the Director, which must include the following, in addition to all other applicable requirements, as identified in the Arizona Testing Manual:

[A.A.C. R18-2-312.B]

1. Test duration;

2. Test location(s);

3. Test method(s); and

4. Source operation and other parameters that may affect test results.

E. Stack Sampling Facilities

The Permittee shall provide, or cause to be provided, performance testing facilities as follows:

[A.A.C. R18-2-312.E]

1. Sampling ports adequate for test methods applicable to the facility;

2. Safe sampling platform(s);

3. Safe access to sampling platform(s); and

4. Utilities for sampling and testing equipment.

F. Interpretation of Final Results

Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs is required to be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control, compliance may, upon the Director's approval, be determined using the arithmetic mean of the results of the other two runs. If the Director or the Director's designee is present, tests may only be stopped with the Director's or such designee's

approval. If the Director or the Director's designee is not present, tests may only be stopped for good cause. Good cause includes: forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control. Termination of any test without good cause after the first run is commenced shall constitute a failure of the test. Supporting documentation, which demonstrates good cause, must be submitted.

[A.A.C. R18-2-306.A.3.c and A.A.C. R18-2-312.F]

G. Report of Final Test Results

A written report of the results of performance tests conducted pursuant to 40 CFR 63, shall be submitted to the Director within 60 days after the test is performed. A written report of the results of all other performance tests shall be submitted within 4 weeks after the completion of the testing as specified in the Arizona Testing Manual. All performance testing reports shall be submitted in accordance with the Arizona Testing Manual and A.A.C. R18-2-312.A.

[A.A.C. R18-2-312.A and B]

H. Extension of Performance Test Deadline

For performance testing required under Condition XVII.A above, the Permittee may request an extension to a performance test deadline due to a force majeure event as follows:

[A.A.C. R18-2-312.J]

1. If a force majeure event is about to occur, occurs, or has occurred for which the Permittee intends to assert a claim of force majeure, the Permittee shall notify the Director in writing as soon as practicable following the date the Permittee first knew, or through due diligence should have known that the event may cause or caused a delay in testing beyond the regulatory deadline. The notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification shall be given as soon as practicable.

   [A.A.C. R18-2-312.J.1]

2. The Permittee shall provide to the Director a written description of the force majeure event and a rationale for attributing the delay in testing beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which the Permittee proposes to conduct the performance test. The performance test shall be conducted as soon as practicable after the force majeure event occurs.

   [A.A.C. R18-2-312.J.2]

3. The decision as to whether or not to grant an extension to the performance test deadline is solely within the discretion of the Director. The Director shall notify the Permittee in writing of approval or disapproval of the request for an extension as soon as practicable.

   [A.A.C. R18-2-312.J.3]

4. Until an extension of the performance test deadline has been approved by the Director under Conditions XVII.H.1, 2, and 3 above, the Permittee remains subject to the requirements of Section XVII.

[A.A.C. R18-2-312.J.4]

5. For purposes of this Section XVII, a "force majeure event" means an event that will be or has been caused by circumstances beyond the control of the Permittee, its contractors, or any entity controlled by the Permittee that prevents it from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite the Permittee's best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the Permittee.

[A.A.C. R18-2-312.J.5]

XVIII. PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.

[A.A.C. R18-2-306.A.8.d]

XIX. SEVERABILITY CLAUSE

The provisions of this permit are severable. In the event of a challenge to any portion of this permit, or if any portion of this permit is held invalid, the remaining permit conditions remain valid and in force.

[A.A.C. R18-2-306.A.7]

XX. PERMIT SHIELD

Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements identified in the portions of this permit subtitled "Permit Shield". The permit shield shall not apply to minor revisions pursuant to Condition XV.B of this Attachment and any facility changes without a permit revision pursuant to Condition XVI of this Attachment.

[A.A.C. R18-2-317.F, - 320, and -325]

XXI. PROTECTION OF STRATOSPHERIC OZONE

If this source becomes subject to the provisions of 40 CFR Part 82, then the Permittee shall comply with these provisions accordingly.

[40 CFR Part 82]

XXII. APPLICABILITY OF NSPS/NESHAP GENERAL PROVISIONS

For all equipment subject to a New Source Performance Standard or a National Emission Standard for Hazardous Air Pollutants, the Permittee shall comply with all applicable requirements contained in Subpart A of Title 40, Chapter 60 and Chapter 63 of the Code of Federal Regulations.

[40 CFR Part 60 Subpart A and Part 63 Subpart A]

ATTACHMENT "B": SPECIFIC CONDITIONS

I. FACILITY-WIDE REQUIREMENTS

A. Opacity

1. Instantaneous Surveys and Six-Minute Observations

a. Instantaneous Surveys

Any instantaneous survey required by this permit shall be determined by either option listed in Conditions I.A.1.a(1) and (2):

[A.A.C. R18-2-311.b]

(1) Alternative Method ALT-082 (Digital Camera Operating Technique)

(a) The Permittee, or Permittee representative, shall be certified in the use of Alternative Method ALT-082.

(b) The results of all instantaneous surveys and six-minute observations shall be obtained within 30 minutes.

(2) EPA Reference Method 9 Certified Observer.

[A.A.C. R18-2-306.A.3.c]

b. Six-Minute Observations

Any six-minute observation required by this permit shall be determined by either option listed in Conditions I.A.1.b(1) and (2):

[A.A.C. R18-2-311.b]

(1) Alternative Method ALT-082 (Digital Camera Operating Technique)

(a) The Permittee, or Permittee representative, shall be certified in the use of Alternative Method ALT-082.

(b) The results of all instantaneous surveys and six-minute observations shall be obtained within 30 minutes.

(2) EPA Reference Method 9.

c. The Permittee shall have on site or on call a person certified in EPA Reference Method 9 unless all 6-minute Method 9 observations required by this permit are conducted as a 6-minute Alternative Method-082 (Digital Camera Operating Technique) and all instantaneous visual surveys required by this permit are conducted as an instantaneous Alt-082 camera survey. Any 6-minute Method 9 observation required by this permit can be conducted as a 6-minute Alternative Method-082 and any

instantaneous visual survey required by this permit can be conducted as an instantaneous Alt-082 camera survey.

[A.A.C. R18-2-306.A.3.c]

2. Monitoring, Recordkeeping, and Reporting Requirements

[A.A.C. R18-2-306.A.3.c]

a. At the frequency specified in the following sections of this permit, the Permittee shall conduct an instantaneous survey of visible emissions from both process stack sources, when in operation, and fugitive dust sources.

b. If the visible emissions on an instantaneous basis appears less than or equal to the applicable opacity standard, then the Permittee shall keep a record of the name of the observer, the date on which the instantaneous survey was made, and the results of the instantaneous survey.

c. If the visible emissions on an instantaneous basis appears greater than the applicable opacity standard, then the Permittee shall immediately conduct a six-minute observation of the visible emissions.

(1) If the six-minute observation of the visible emissions is less than or equal to the applicable opacity standard, then the Permittee shall record the name of the observer, the date on which the six-minute observation was made, and the results of the six-minute observation.

(2) If the six-minute observation of the visible emissions is greater than the applicable opacity standard, then the Permittee shall do the following:

(a) Adjust or repair the controls or equipment to reduce opacity to less than or equal to the opacity standard;

(b) Record the name of the observer, the date on which the six-minute observation was made, the results of the six-minute observation, and all corrective action taken; and

(c) Report the event as an excess emission for opacity in accordance with Condition XI.A of Attachment "A".

(d) Conduct another six-minute observation to document the effectiveness of the adjustments or repairs completed.

B. Reporting Requirements

1. At the time that the compliance certifications required by Section VII of Attachment "A" are submitted, the Permittee shall submit reports of all monitoring activities required by this permit, performed in the same six month period as applies to the compliance certification period.

[A.A.C. R18-2-306.A.5.a]

2. Deviations from the following Attachment "B" permit conditions shall be promptly reported in accordance with Condition XI.B.2 of Attachment "A":
[A.A.C. R18-2-306.A.5.b]

a. Attachment "B"

(1) Conditions III.C.2.b(1) through III.C.2.b(3)

(2) Conditions III.D.2.b(2)

(3) Conditions III.E.4.b

b. Attachment "C"

(1) Conditions III.B.2.a through III.B.2.b

(2) Conditions III.C.3.a through III.C.3.b

(3) VI.B.2.a and VI.B.2.b

(4) Condition VI.D.2.a

(5) Condition VI.G.2.a

(6) Condition VI.I.4.a(1)

(7) Condition VII.B.3.a

C. The conditions of this Attachment shall apply to equipment identified in Attachment "D" of this Permit. In the event that after the date of permit issuance, the Permittee identifies equipment existing at the plant at the time of permit issuance, but not included in the permit application for this permit, or if the Permittee identifies errors in Attachment "D" of this Permit, the Permittee shall follow the appropriate administrative procedures as set forth in Article 3 of Title 18, Chapter 2 of the Arizona Administrative Code to include such equipment in the permit or to correct such errors.
[A.A.C. R18-2-304.G]

D. The following conditions apply to existing sources, as that term is defined in A.A.C. R18-2-701.23, that are not otherwise subject to standards of performance under A.A.C. Title 18, Chapter 2, Articles 7, 9, or 11.

1. The Permittee shall not cause, allow, or permit gaseous or odorous materials to be emitted from equipment, operations or premises under its control in such quantities or concentrations as to cause air pollution.
[A.A.C. R18-2-730.D]

2. Where a stack, vent or other outlet is at such a level that fumes, gas mist, odor, smoke, vapor or any combination thereof constituting air pollution is discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent, or other outlet by the owner or

operator thereof to a degree that will adequately dilute, reduce or eliminate the discharge of air pollution to adjoining property.

[A.A.C. R18-2-730.G]

II. FUGITIVE DUST REQUIREMENTS

A. Applicability

This Section applies to

1. Fugitive dust sources in the facility

2. Low-Grade and High-Grade Limestone Storage Piles

B. Particulate Matter and Opacity

Open Areas, Roadways & Streets, Storage Piles, and Material Handling

1. Emission Limitations/Standards

a. Opacity of emissions from any fugitive dust non-point source shall not be greater than 40% measured in accordance with 40 CFR 60, Appendix A, Reference Method 9.

[A.A.C. R18-2-614]

b. The Permittee shall not or allow visible emissions from low-grade and high-grade limestone storage piles in excess of 20% opacity.

[Consent Decree 4:10-cv-00573-DCB Condition II.B of Exhibit A]

c. The Permittee shall employ the following reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne:

(1) For a building or its appurtenances, or a building or subdivision site, or a driveway, or a parking area, or a vacant lot or sales lot, or an urban or suburban open area to be constructed, used, altered, repaired, demolished, cleared, or leveled, or the earth to be moved or excavated, keep dust and other types of air contaminants to a minimum by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means;

[A.A.C. R18-2-604.A]

(2) Keep dust to a minimum from vacant lots or an urban or suburban open area where motor vehicular activity occurs by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means;

[A.A.C. R18-2-604.B]

(3) Keep dust and other particulates to a minimum by employing dust suppressants, temporary paving, detouring, wetting down or by other reasonable means when a roadway or alley is used, repaired, constructed, or reconstructed;

[A.A.C. R18-2-605.A]

(4) Take reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods to prevent excessive amounts of particulate matter from becoming airborne when crushing, screening, handling, transporting or conveying of materials or other operations likely to result in significant amounts of airborne dust.

[A.A.C. R18-2-605.B]

(5) Take reasonable precautions, such as wetting, applying dust suppressants, or covering the load when transporting material likely to give rise to airborne dust. Earth or other material that is deposited by trucking or earth moving equipment shall be removed from paved streets by the person responsible for such deposits.

[A.A.C. R18-2-606]

(6) Take reasonable precautions such as chemical stabilization, wetting, or covering when organic or inorganic dust producing material is being stacked, piled, or otherwise stored to prevent excessive amounts of particulate matter from becoming airborne;

[A.A.C. R18-2-607.A]

(7) Operate stacking and reclaiming machinery utilized at storage piles at all times with a minimum fall of material, or with the use of spray bars and wetting agents to prevent excessive amounts of particulate matter from becoming airborne;

[A.A.C. R18-2-607.B]

(8) Any other method as proposed by the Permittee and approved by the Director.

[A.A.C. R18-2-306.A.3.c]

d. Paving

(1) *The Permittee shall maintain the plant road segments paved in 1991, 1992, 1995, 1996, and 2023 in a paved condition. The Permittee shall maintain records identifying these paved road segments. These records shall be available to ADEQ on request.*

[A.A.C. R18-2-306.01, A.A.C. R 18-2-331.A.3.a]
[Material permit conditions are indicated by underline and italics]

e. Dust Control Requirements for Unpaved Roads

(1) *The Permittee shall operate at all times in conformance with the Dust Control Plan approved by the Director. The Dust Control*

Plan shall be designed to achieve a 65% control efficiency for the following road sections

[A.A.C. R18-2-306.01, A.A.C. R 18-2-331.A.3.a]
[Material permit conditions are indicated by underline and italics]

(a) All active roads at the quarry;

(b) The unpaved sections of the road from Avra Valley road to Twin Peaks Road;

(c) The unpaved sections of the roads from the Canal to Avra Valley Road; and

(d) The following active unpaved roads at the cement plant: East Road, West Road, Coal/Coke Storage Area Road, Central Control Road, and Reclaimer Road

(2) *The Permittee shall operate at all times in conformance with the Dust Control Plan approved by the Director. The Dust Control Plan shall be designed to achieve a 85% control efficiency for the unpaved road segments associated with aggregate operations, to be achieved from a combination of watering and vehicle speed restrictions. Aggregate operations include:*

(a) *The Twin Peaks Rock and Stone Aggregate Plant,*

(b) *The Cotton Field Primary and Overland Plant,*

(c) *The Manufactured Fines Plant, and*

(d) *The Wash Plant.*

[A.A.C. R18-2-306.01, A.A.C. R 18-2-331.A.3.a]
[Material permit conditions are indicated by underline and italics]

~~(2)~~(3) The Permittee shall maintain diagrams of the road sections referenced in Condition II.B.1.e(1) above.

[A.A.C. R18-2-306.A.2]

f. Open Burning

(1) Except as provided in Condition II.B.1.f(2) below, and except when permitted to do so by either the Director or the local officer delegated the authority for issuance of open burning permits, the Permittee shall not ignite, cause to be ignited, permit to be ignited, or suffer, allow or maintain any open outdoor fire.

[A.A.C. R18-2-602.B]

(a) "Open outdoor fire" means any combustion of combustible material of any type outdoors, in the open where the products of combustion are not directed through a flue. Cutting torches welding, open flames used in the maintenance and repair of stationary or mobile equipment, coal fires, explosives, fuses and blasting agents used in the quarry and torches used to ignite the Kiln 1-4 are not open outdoor fires.

[A.A.C. R18-2-602.A]

(b) "Flue," as used in (a) above, means any duct or passage for air, gases or the like, such as a stack or chimney.

[A.A.C. R18-2-602.A]

(2) The following fires are exempted from the prohibition in Condition II.B.1.f(1) of this Attachment:

[A.A.C. R18-2-602.C]

(a) Fires used only for:

(i) Cooking of food,

(ii) Providing warmth for human beings,

(iii) Recreational purposes,

(iv) Branding of animals,

(v) Orchard heaters for the purpose of frost protection in farming or nursery operations, or

(vi) The proper disposal of flags under 4 U.S.C. 1, § 8.

[A.A.C. R18-2-602.C.1]

(b) Any fire set or permitted by any public officer in the performance of official duty, if the fire is set or permission given for the following purpose:

[A.A.C. R18-2-602.C.2]

(i) Control of an active wildfire; or

(ii) Instruction in the method of fighting fires.

(c) Fire set by or permitted by the Director of Department of Agriculture for the purpose of disease and pest prevention in an organized, area-wide control of an epidemic or infestation affecting livestock or crops.

[A.A.C. R18-2-602.C.3]

(d) Prescribed burns set by or assisted by the federal government or any of its departments, agencies, or agents, or the state or any of its agencies, departments, or political subdivisions, regulated under Article 15 of A.A.C. R18-2.

[A.A.C. R18-2-602.C.4]

2. General Limitation on Visible Emissions

The Permittee shall not cause or permit the airborne diffusion of visible emissions, including fugitive dust, beyond the property boundary line within which the emissions became airborne.

[Pima County Applicable SIP Rule 343]

a. In actual practice, the airborne diffusion of visible emissions across property lines shall be prevented by appropriately controlling the emissions at the point of discharge, or ceasing entirely the activity or operation which is causing or contributing to the emissions.

[Pima County Applicable SIP Rule 343.A.1]

b. Condition II.B.2.a shall not apply when the naturally induced wind speed exceeds 25 miles per hour as estimated by a certified visible emission evaluator using the Beaufort Scale of Wind-Speed Equivalents, or as

recorded by a U.S. Weather Bureau Section or a U.S. Government military installation.

[Pima County Applicable SIP Rule 343.B]

(1) The exception in Condition II.B.2.b shall not apply to the demolition, destruction, transport, or pulverization of structures containing friable asbestos materials, and all dust producing activities associated with such sources shall be halted when the wind is causing or contributing visible emissions to cross beyond the property lines within which the emissions discharge.

[Pima County Applicable SIP Rule 343.B.1]

(2) Any disregard of, neglect of, or inattention to other controls required herein, during any time when Condition II.B.2.b is in effect, shall automatically waive the exception in Condition II.B.2.b, and such relaxation of controls shall be a violation.

[Pima County Applicable SIP Rule 343.B.2]

3. Monitoring, Recordkeeping and Reporting Requirements

a. Property Boundary Visible Emissions Monitoring

(1) Property Boundary Line with the Rillito Community

(a) On the days when there is coal unloading activity at the facility, the Permittee shall conduct daily two (2) visible emissions surveys of the property boundary line with the Rillito Community, in accordance with EPA Reference Method 22. The surveys shall be conducted during the coal unloading activity that occurs in daylight hours.

(b) If there is no coal unloading activity, the Permittee shall conduct daily two (2) visible emissions survey of the property boundary line with the Rillito Community, in accordance with EPA Reference Method 22. The surveys shall be conducted during daylight hours with a minimum of 4 hours between observations.

[A.A.C. R18-2-306.A.3.c]

(2) Other Property Boundary Lines

(a) On the days when there is bauxite unloading activity at the facility, the Permittee shall conduct a daily visible emissions survey of the closest property boundary line in accordance with EPA Reference Method 22. The survey shall be conducted during the bauxite unloading activity that occurs in daylight hours.

(b) The daily visible emission surveys in accordance with EPA Reference Method 22 at the Quarry and the Twin

Peaks Rock and Stone aggregate plant shall be conducted during daylight hours only when there is activity at each site.

(c) For all property boundary lines other than II.B.3.a(1), II.B.3.a(2)(a), and II.B.3.a(2)(b), the Permittee shall conduct a daily visible emissions survey during daylight hours in accordance with EPA Reference Method 22.
[A.A.C. R18-2-306.A.3.c]

(3) If visible emissions related to the Permittee's operations are observed to cross a property boundary line, the Permittee shall report the emissions using the excess emission reporting procedures in Section XI of Attachment "A" of this permit.
[A.A.C. R18-2-306.A.3.c]

(4) For each daily visible emissions survey required by Conditions II.B.3.a(1) and II.B.3.a(2) above the Permittee shall maintain the following records:
[A.A.C. R18-2-306.A.3.c]

(a) Location, date, time of observation;

(b) Name of the observer;

(c) Results of the observation;

(d) If corrective action was necessary, a description of the corrective action

b. Visible Emissions Observation Plan

The Permittee shall conduct Visible Emissions Observation Procedures at least once each calendar month as per the Visible Emissions Observation Plan approved by the Department, and in accordance with Conditions II.B.3.b(1) through II.B.3.b(6) below.

(1) A certified EPA Reference Method 9 observer shall conduct a visual survey of visible emissions from non-point sources and, where applicable, fugitive emissions in accordance with the Visible Emissions Observation Plan, under representative operating conditions.

(2) The Permittee shall keep a record of the name of the observer, the date and time on which the observation was made, the location(s) of the observation, and the results of the observation.

(3) If the observer sees a plume from a non-point source and, where applicable, fugitive emissions source that on an instantaneous basis appears to exceed the applicable opacity standard, then the

observer shall, if practicable, take a six-minute EPA Reference Method 9 observation of the plume.

(4) If the six-minute opacity of the plume is less than the applicable opacity standard, the observer shall make a record of the following:

(a) Location, date, and time of the observation;

(b) The results of the EPA Reference Method 9 observation; and

(c) The name of the observer.

(5) If the six-minute opacity of the plume exceeds the applicable opacity standard, then Permittee shall do the following:

(a) Adjust or repair the controls or equipment to reduce opacity to below the applicable opacity standard;

(b) Record corrective actions;

(c) Report as an excess emission in accordance with Section XI of Attachment "A" of this permit; and

(d) Conduct a six-minute EPA Reference Method 9 observation reading within 48 hours after taking corrective action. The results of this observation including date, time, name of the observer, and location shall be recorded.

(6) Any changes to the Visible Emissions Observation Plan approved by the Director shall be made only with the prior approval of the Director.

[A.A.C. R18-2-306.A.3.c]

c. The Permittee shall maintain records of maintenance activities conducted on the paved roads identified in Condition II.B.1.d of this Attachment.

[A.A.C. R18-2-306.A.3.c]

d. Recordkeeping for Fugitive Dust Work Practice Requirements

(1) The Permittee shall maintain records of the dates on which any of the following activities were performed and all control measures which were employed:

(a) Constructing, altering, or demolishing a building or its appurtenances;

(b) Constructing or reconstructing a roadway, driveway, or parking area. Construction and reconstruction activities at the quarry and the aggregate plant are not subject to this condition.

[A.A.C. R18-2-306.A.3.c]

(2) The Permittee shall document deviations from the control measures used for the following activities by recording the date, time, and reason for the deviation:

(a) When moving or excavating earth,

(b) When using parking lots or driveways, and

(c) When engaging in the activities described in Conditions II.B.1.c(1) through II.B.1.c(8) of this Attachment.

[A.A.C. R18-2-306.A.3.c]

e. The Permittee shall maintain records of each instance of operation not consistent with the current Dust Control Plan.

f. Each such instance shall be considered a permit deviation and shall be reported in accordance with Section XII of Attachment "A".

[A.A.C. R18-2-306.A.3.c]

4. Performance Test

The Permittee shall conduct an annual performance test in accordance with Method 9 of 40 CFR 60 Appendix A to determine compliance with the 20% opacity limit for low-grade and high-grade limestone storage piles.

[Consent Decree 4:10-cv-00573-DCB Condition II.D of Exhibit A]

5. Permit Shield

Compliance with the condition in this Section shall be deemed compliance with A.A.C. R18-2-614, A.A.C.R18-2-702.B.3, A.A.C. R18-2-604.A, A.A.C. R18-2-604.B, A.A.C.R18-2-605.A, A.A.C.R18-2-605.B, A.A.C. R18-2-606, A.A.C. R18-2-607.A., A.A.C. R18-2-607.B, A.A.C. R18-2-602.A, A.A.C. R18-2-602.B, A.A.C. R18-2-602.C and Pima County SIP Rule 343.

[A.A.C.R18-2-325]

III. ROCK CRUSHING AND SCREENING ACTIVITIES

A. Applicability

This Section is applicable to the equipment identified in the following Sections of the Equipment list in Attachments "D":

1. Section I Quarry Crushing System

2. Section II Overland Conveyor System

3. Section III Stacker/Reclaimer and Storage Area

4. Section IV Roller Mill Feed Area

5. Section VII Raw Feed Material to Rock Storage

6. Section XXII Twin Peaks Rock and Stone Aggregate Plant

7. XXIII Cotton Field Primary and Overland Plant

8. XXIV Manufactured Fines Plant

~~6.~~9. XXV Wash Plant

~~7.~~10. Section XXVI~~II~~ Portable Grizzly Screen when Processing Limestone/Gypsum

B. General Requirements

1. *The Permittee shall not process more than the following throughputs ~~800,000 tons of rocks~~ in the Twin Peaks and Stone Aggregate ~~Rock Crushing and Screening~~ Plant ~~in any rolling 12-month period~~:*

   a. *1,400,000 tons of rock in any rolling 12-month period in conveyors B11-BC1, B11-BC2, B11-TS-BC1, and B11-TS-BC2.*

   ~~a.~~b. *1,100,000 tons of rock in any rolling 12-month period for all other equipment*

[A.A.C. R18-2-306.01.A and -331.A.3.a]
[Material permit conditions are indicated by underline and italics]

2. *The Permittee shall not process more than 1,100,000 tons of rock in the Cotton Field Primary and Overland Plant in any 12-month rolling period .*

[A.A.C. R18-2-306.01.A and -331.A.3.a]
[Material permit conditions are indicated by underline and italics]

~~2.~~3. *The Permittee shall install, calibrate*, maintain, and operate *monitoring devices which can be used to determine daily the process weight of sand, gravel or crushed stone produced. The weighing devices shall have an accuracy of plus or minus 5 percent over their operating range.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306.A.3.d , -331.A.3.c, -331.B, and 722.F]
[Material permit conditions are indicated by underline and italics]

~~3.~~4. The Permittee shall demonstrate compliance with Condition III.B.2 above by conducting, and maintaining record of, annual calibration checks.

[A.A.C. R18-2-306.A.3.c]

~~4.~~5. The Permittee shall keep records of the rolling 12-month total weight of rock processed. These records shall be made available to ADEQ upon request.

[A.A.C. R18-2-306.A.3.c]

~~5.~~6. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with A.A.C. R18-2-722.F.

[A.A.C. R18-2-325]

C. Equipment Not Subject to New Source Performance Standards (NSPS)

1. Applicability

This Part is applicable to the affected facilities in Section III.A above that are either constructed on or before August 31, 1983 or exempt from the requirements of NSPS Subpart OOO.

2. Particulate Matter and Opacity

a. Emission Limits/Standards

(1) The Permittee shall not cause, allow or permit the discharge of particulate matter into the atmosphere, except as fugitive emissions, in any one hour from any gravel or crushed stone processing plant in total quantities in excess of the amounts calculated by one of the following equations:

[P.C.C. 17.16.370.B]

(a) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable particulate emissions shall be determined by the following equation:

$E = 3.59\ P^{0.62}$

Where:

E = the maximum allowable emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour.

(b) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E = 17.31\ P^{0.16}$

Where "E" and "P" are defined as in Condition III.C.2.a(1)(a) above.

(2) Opacity

The Permittee shall not cause to be discharged into the atmosphere from any gravel or stone crushing processes any emissions greater than 20 percent opacity from any plume of effluent.

[A.A.C. R18-2-702.B, P.C.C. 17.16.130.B]

b. Air Pollution Control Requirements

(1) *The Permittee shall operate the following air dust collectors in a manner consistent with good air pollution control practice for minimizing particulate matter emissions from the process sources subject to this Part.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306.A.2, A.A.C. R18-2-331.A.3.e, A.A.C. R18-2-331.B]
[Material Permit Condition is indicated by underline and italics]

B2-DC1, B3-DC1, B5-DC1, B5-DC2, B5-DC3, B7-DC1, B8-DC1, B8-DC2, B9-DC1, B9-DC2, B9-DC3, B9-DC5, C2-DC1, TP-DC1

(2) Spray bar pollution control shall be utilized in accordance with "EPA Control of Air Emissions From Process Operations in the Rock Crushing Industry" (EPA 340/1-79-002), and "Wet Suppression System" (pages 15-34, amended as of January, 1979 (and no future amendments or editions)), as incorporated herein by reference and on file with the Office of the Secretary of State, with placement of spray bars and nozzles as required by the Director to minimize air pollution.

[A.A.C. R18-2-722.D]

(3) The Permittee shall control fugitive emissions from process sources subject to this Part in accordance with the methods listed in Condition II.B.1.c of this Attachment.

[A.A.C. R18-2-722.E]

c. Monitoring, Recordkeeping and Reporting Requirements

(1) The Permittee shall maintain a record of daily production rates of gravel or crushed stone produced.

[A.A.C. R18-2-722.G]

(2) A certified Method 9 observer shall conduct the periodic opacity monitoring method specified in Condition I.A above on a monthly basis from all the stacks while they are in operation.

[A.A.C. R18-2-306.A.3.c]

d. Performance Testing Requirements

(1) To demonstrate compliance with Condition III.C.2.a(2), the Permittee shall conduct performance tests on each dust collector listed in Condition III.C.2.b(1) once during the permit term in accordance with EPA Reference Method 9 of 40 CFR Part 60, Appendix A.

[A.A.C. R18-2-312.A, A.A.C. R18-2-306.A.3.c]

(2) To demonstrate compliance with Condition III.C.2.a(1), the Permittee shall conduct performance test once during the permit term on the following dust collectors in accordance with EPA Reference Method 5 of 40 CFR 60, Appendix A:

(a) Dust Collector B2-DC1, B3-DC1

(b) Any one of the following Dust Collectors: B5-DC1, B5-DC2, B5-DC3, and B7-DC1

(c) One of the following Dust Collectors: B9-DC2 and B9-DC3

(d) Any one of the following Dust Collectors: B8-DC1, B8-DC2, B9-DC1, B9-DC5 and C2-DC1.

[A.A.C. R18-2-312.A, A.A.C. R18-2-306.A.3.c]

e. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance P.C.C. 17.16.370.B, P.C.C 17.16.130.B, A.A.C. R18-2-702.B, A.A.C. R18-2-722.D and A.A.C. R18-2-722.E.

[A.A.C. R18-2-325]

D. Equipment Subject to Pre-April 22, 2008 New Source Performance Standards (NSPS)

1. Applicability

This Part is applicable to the affected facilities in Section III.A that are constructed, modified, or reconstructed after August 31, 1983 but before April 22, 2008.

[40 CFR 60.670]

2. Particulate Matter and Opacity

a. Emission limitations and Standards

(1) The Permittee shall not cause to be discharged into the atmosphere from any affected facility any stack emissions which:

(a) Contain particulate matter in excess of 0.05 grams/dry standard cubic meter (0.022 grains per dry standard cubic foot); and

(b) *Exhibit greater than 7 percent opacity*.

[40 CFR 60.672(a) and A.A.C. R18-2-331.A.3.f]
[Material permit conditions are indicated by underline and italics]

(2) *The Permittee shall not allow to be discharged into the atmosphere from any grinding mill, screening operation, bucket elevator, transfer point on belt conveyors, bagging operation, storage bin, enclosed truck or railcar loading stations, or from any other affected facility any fugitive emissions (including emissions escaping capture systems) which exhibit visible emissions greater than 10 percent opacity..*

[40 CFR 60.672(b) and A.A.C. R18-2-331.A.3.f]
[Material permit conditions are indicated by underline and italics]

(3) *The Permittee shall not allow to be discharged into the atmosphere from any crusher at which a capture system is not used, any fugitive emissions which exhibit visible emissions greater than 15 percent opacity.*

[40 CFR 60.672(b) and A.A.C. R18-2-331.A.3.f]
[Material permit conditions are indicated by underline and italics]

(4) Transfer points to a stockpile and truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher are exempt from the requirements of 40 CFR 60 Subpart OOO.
[40 CFR 60.671 and 60.672(d)]

b. Air Pollution Control Requirements

(1) At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate all affected facilities including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing air emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Director, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
[40 CFR 60.11(d)]

(2) *Water spray bars or equivalent control equipment shall be used on all crushers and screens whenever the equipment is operating or material must be adequately wet to minimize visible emissions to the extent practical.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.
[A.A.C. R-18-2-306.01, A.A.C. R18-2-331.A.3. e and A.A.C. R18-2-331.B]
[Material permit conditions are indicated by underline and italics]

(3) *The Permittee shall operate the air dust collector (TP-DC1) associated with jaw crusher (CR-~~31~~) and conveyor belts C-5 and C-6 ~~(C-4)~~ in a manner consistent with good air pollution control practices for minimizing particulate matter emissions*. This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.
[A.A.C. R18-2-331.A.3.e and A.A.C. R18-2-331.B]
[Material Permit Condition is indicated by underline and italics]

c. Monitoring, Reporting, and Recordkeeping Requirements

A certified Method 9 observer shall conduct the periodic opacity monitoring method specified in Condition I.A above on a monthly basis from the affected stacks while they are in operation.
[A.A.C. R18-2-306.A.3.c]

d. Notification Requirements

(1) The Permittee shall furnish to the Director and EPA Administrator for all new facilities that were not previously permitted a written notification as follows:

[40 CFR 60.7]

(a) A notification of the date construction or reconstruction (as defined under 40 CFR 60.15 and 60.673) of the permitted facility is commenced postmarked no later than 30 days after such date.

[40 CFR 60.7(a)(1)]

(b) A notification of the actual date of initial startup of a permitted facility postmarked within 15 days after such date.

[40 CFR 60.7(a)(3)]

(2) The Permittee shall furnish to the Director a written notification of any physical or operational change to an affected facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in 40 CFR 60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Director may request additional relevant information subsequent to this notice.

[40 CFR 60.7(a)(4)]

e. Performance Testing Requirements

(1) To demonstrate compliance with Condition III.D.2.a(1)(b) above, the Permittee shall conduct a performance test on dust collector (TP-DC1) associated with jaw (CR-~~3~~1) and conveyor belts C-5 and C-6 ~~(C-4)~~ once during the permit term in accordance with EPA Reference Method 9 of 40 CFR Part 60, Appendix A. To demonstrate compliance with A.A.C. R18-2-312.A, the Permittee shall conduct the performance test for TP-DC1 within 60 days after it has achieved the capability to operate at its maximum production rate on a sustained basis but no later than 180 days after initial start-up of the dust collector.

[A.A.C. R18-2-312.A, A.A.C. R18-2-306.A.3.c]

(2) To demonstrate compliance with Condition III.D.2.a(1)(a) above, the Permittee shall conduct a performance test on dust collector (TP-DC1) associated with jaw crusher (CR-~~3~~1) and conveyor belts C-5 and C-6 ~~(C-4)~~ once during each permit term in accordance with EPA Reference Method 5 of 40 CFR Part 60, Appendix A.

[A.A.C. R18-2-312.A, A.A.C. R18-2-306.A.3.c]

f. Permit Shield

Compliance with this Part shall be deemed compliance with A.A.C. R18-2-312, and 40 CFR 60.670, 60.671, 60.672(a), 60.672(b) and 60.672(d).
[A.A.C.R18-2-325]

E. Equipment Subject to Post-April 22, 2008 New Source Performance Standards (NSPS)

1. Applicability

This Part is applicable to the affected facilities in Section III.A that are constructed, modified, or reconstructed on or after April 22, 2008.
[40 CFR 60.670]

2. Emission Limitations and Standards

a. *Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, the Permittee shall not cause to be discharged into the atmosphere from affected facilities with capture systems used to capture and transport particulate matter to a control device any stack emissions that exceed 0.032 g/dscm (0.014 gr/dscf).*
[A.A.C. R18-2-331.A.3.f and 40 CFR 60.672(a) including Table 2]
[Material permit conditions are indicated by underline and italics]

b. *Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, the Permittee shall not cause to be discharged into the atmosphere from crushers at which a capture system is not used any fugitive emissions that exhibit greater than 12% opacity.*
[A.A.C. R18-2-331.A.3.f and 40 CFR 60.672(b) including Table 3]
[Material permit conditions are indicated by underline and italics]

c. *Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, the Permittee shall not cause to be discharged into the atmosphere from grinding mills, screening operations, bucket elevators, transfer points on belt conveyors, bagging operations, storage bins, enclosed truck or railcar loading stations or from any other affected facility, except as provide in Condition III.E.2.b above, any fugitive emissions that exhibit greater than 7% opacity.*
[A.A.C. R18-2-331.A.3.f and 40 CFR 60.672(b) including Table 3]
[Material permit conditions are indicated by underline and italics]

d. Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of Condition III.E.2.a through III.E.2.c above.

[40 CFR 60.672(d)]

3. Operational Limitations

At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

[40 CFR 60.11(d)]

4. Air Pollution Prevention and Control Requirements

a. At all times, the Permittee shall, to the extent practicable, utilize wet suppression on the affected facilities to minimize particulate matter emissions and comply with the applicable emission limitations and standards of Condition III.E.2 above. Wet suppression options include water sprays, surfactant use, water jets, foggers, inherent moisture content (including moisture from upstream water sprays), or other equivalent control methods.

[A.A.C. R18-2-306.A.2]

b. *The Permittee shall operate the following air dust collectors in a manner consistent with good air pollution control practice for minimizing particulate matter emissions from the process sources subject to this Part.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306.A.2 and -331.A.3.e]
[Material Permit Condition is indicated by underline and italics]

B7-DC1, B11-DC1, B2-DC2, B2-DC3, B2-DC4, and Manufactured Fines Plant Baghouse.

5. Monitoring, Recordkeeping, and Reporting Requirements

a. Except as specified in Condition III.E.5.b, the Permittee shall conduct quarterly 30-minute visible emissions inspections using EPA Method 22 (40 CFR part 60, appendix A-7) for any affected facility that uses a baghouse to control emissions. The Method 22 (40 CFR part 60, appendix A-7) test shall be conducted while the baghouse is operating. The test is successful if no visible emissions are observed. If any visible emissions are observed, the Permittee shall initiate corrective action within 24 hours to return the baghouse to normal operation. The Permittee shall record each Method 22 (40 CFR part 60, appendix A-7) test, including the date and any corrective actions taken, in the logbook required under Condition III.E.5.e. The Permittee may establish a different baghouse-specific

success level for the visible emissions test (other than no visible emissions) by conducting a PM performance test according to Condition III.E.6.c simultaneously with a Method 22 (40 CFR part 60, appendix A-7) to determine what constitutes normal visible emissions from that affected facility's baghouse when it is in compliance with the applicable PM concentration limit in Condition III.E.2.a. The revised visible emissions success level must be incorporated into the permit for the affected facility.
[40 CFR 60.674(c)]

b. As an alternative to the periodic Method 22 (40 CFR part 60, appendix A-7) visible emissions inspections specified in Condition III.E.5.a, the Permittee may use a bag leak detection system for any affected facility that uses a baghouse to control emissions. The Permittee shall install, operate, and maintain the bag leak detection system according to Conditions III.E.5.b(1) through III.E.5.b(3).
[40 CFR 60.674(d)]

(1) Each bag leak detection system must meet the specifications and requirements in Conditions III.E.5.b(1)(a) through III.E.5.b(1)(h).
[40 CFR 60.674(d)(1)]

(a) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 1 milligram per dry standard cubic meter (0.00044 grains per actual cubic foot) or less.
[40 CFR 60.674(d)(1)(i)]

(b) The bag leak detection system sensor must provide output of relative PM loadings. The Permittee shall continuously record the output from the bag leak detection system using electronic or other means (*e.g.*, using a strip chart recorder or a data logger).
[40 CFR 60.674(d)(1)(ii)]

(c) The bag leak detection system must be equipped with an alarm system that will sound when the system detects an increase in relative particulate loading over the alarm set point established according to Condition III.E.5.b(1)(d), and the alarm must be located such that it can be heard by the appropriate plant personnel.
[40 CFR 60.674(d)(1)(iii)]

(d) In the initial adjustment of the bag leak detection system, the Permittee must establish, at a minimum, the baseline output by adjusting the sensitivity (range) and the averaging period of the device, the alarm set points, and the alarm delay time.
[40 CFR 60.674(d)(1)(iv)]

(e) Following initial adjustment, the Permittee shall not adjust the averaging period, alarm set point, or alarm

delay time without approval from the Director except as provided in Condition III.E.5.b(1)(f).
[40 CFR 60.674(d)(1)(v)]

(f) Once per quarter, the Permittee may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required by Condition III.E.5.b(2).
[40 CFR 60.674(d)(1)(vi)]

(g) The Permittee must install the bag leak detection sensor downstream of the fabric filter.
[40 CFR 60.674(d)(1)(vii)]

(h) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.
[40 CFR 60.674(d)(1)(viii)]

(2) The Permittee must develop and submit to the Director for approval of a site-specific monitoring plan for each bag leak detection system. The Permittee must operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. Each monitoring plan must describe the items in Conditions III.E.5.b(2)(a) through III.E.5.b(2)(f).
[40 CFR 60.674(d)(2)]

(a) Installation of the bag leak detection system;
[40 CFR 60.674(d)(2)(i)]

(b) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established;
[40 CFR 60.674(d)(2)(ii)]

(c) Operation of the bag leak detection system, including quality assurance procedures;
[40 CFR 60.674(d)(2)(iii)]

(d) How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list;
[40 CFR 60.674(d)(2)(iv)]

(e) How the bag leak detection system output will be recorded and stored; and
[40 CFR 60.674(d)(2)(v)]

(f) Corrective action procedures as specified in Condition III.E.5.b(3). In approving the site-specific monitoring

plan, the Director may allow the Permittee more than 3 hours to alleviate a specific condition that causes an alarm if the Permittee identifies in the monitoring plan this specific condition as one that could lead to an alarm, adequately explains why it is not feasible to alleviate this condition within 3 hours of the time the alarm occurs, and demonstrates that the requested time will ensure alleviation of this condition as expeditiously as practicable.

[40 CFR 60.674(d)(2)(vi)]

(3) For each bag leak detection system, the Permittee must initiate procedures to determine the cause of every alarm within 1 hour of the alarm. Except as provided in Condition III.E.5.b(2)(f), the Permittee must alleviate the cause of the alarm within 3 hours of the alarm by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to the following:

[40 CFR 60.674(d)(3)]

(a) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in PM emissions;

(b) Sealing off defective bags or filter media;

(c) Replacing defective bags or filter media or otherwise repairing the control device;

(d) Sealing off a defective fabric filter compartment;

(e) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; or

(f) Shutting down the process producing the PM emissions.

c. For any affected facility that uses wet suppression to control emissions, the Permittee shall perform monthly inspections to check that water is flowing to the discharge spray nozzles in the wet suppression system. The Permittee must initiate corrective action within 24 hours and complete corrective action as expediently as practical if the Permittee finds that water is not flowing properly during an inspection of the water spray nozzles. The Permittee must record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken, in the logbook required under Condition III.E.5.e.

[40 CFR 60.674(b)]

d. If an affected facility that routinely uses wet suppression water sprays ceases operation of the water sprays or is using a control mechanism to reduce fugitive emissions other than water sprays during the monthly

inspection (for example, water from recent rainfall), the logbook entry required by Condition III.E.5.e must specify the control mechanism being used instead of the water sprays.

[40 CFR 60.674(b)(2)]

e. The Permittee must record each periodic inspection required under ConditionIII.E.5.a or III.E.5.c, including dates and any corrective actions taken, in a logbook (in written or electronic format). The Permittee must keep the logbook onsite and make hard or electronic copies (whichever is requested) of the logbook available to the Director upon request.

[40 CFR 60.676(b)(1)]

f. For each bag leak detection system installed and operated according to Condition III.E.5.b, the Permittee must keep the records specified in Conditions III.E.5.f(1) through III.E.5.f(3).

[40 CFR 60.676(b)(2)]

(1) Records of the bag leak detection system output;

[40 CFR 60.676(b)(2)(i)]

(2) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and

[40 CFR 60.676(b)(2)(iii)]

(3) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and whether the cause of the alarm was alleviated within 3 hours of the alarm.

[40 CFR 60.676(b)(2)(iii)]

g. The Permittee shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in Conditions III.E.2.a through III.E.2.c, including reports of opacity observations made using Method 9 (40 CFR part 60, appendix A-4) to demonstrate compliance with Conditions III.E.2.b and III.E.2.c.

[40 CFR 60.676(f)]

h. The Subpart A requirement under 40 CFR 60.7(a)(1) for notification of the date construction or reconstruction commenced is waived for the affected facilities.

[40 CFR 60.676(h)]

i. A notification of the actual date of initial startup of each affected facility shall be submitted to the Director. For a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the Permittee to the Director. The notification shall be postmarked within 15 days after such

date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.

[40 CFR 60.676(i)(1)]

6. Performance Testing Requirements

a. The Permittee shall conduct performance tests on all affected facilities as specified in Condition III.E.6.b through Condition III.E.6.k below.

[40 CFR 60.8, 40 CFR 60.11, 40 CFR 60.672(a) incl. Table 2, and 40 CFR 60.672(b) incl. Table 3]

b. For the purpose of demonstrating initial compliance with Condition III.E.2.a, an initial performance test consisting of stack testing shall be conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but no later than 180 days after initial startup of the facility.

[40 CFR 60.8, 60.672(a), and 60.675]

c. The Permittee shall determine compliance with the PM standards in Condition III.E.2.a as follows:

Method 5 of appendix A-3 of 40 CFR 60 or Method 17 of appendix A-6 of 40 CFR 60 shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5 (40 CFR part 60, appendix A-3), if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter.

[40 CFR 60.675(b)]

d. For the purpose of demonstrating initial compliance with Conditions III.E.2.b and III.E.2.c, an initial performance test consisting of opacity observations shall be conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but no later than 180 days after initial startup of the facility.

[40 CFR 60.11, 60.672(b), and 60.675]

e. The Permittee shall conduct a repeat performance test according to 40 CFR 60.11 and 40 CFR 60.675 within 5 years from the previous performance test required in Condition III.E.6.d for fugitive emissions from affected facilities without water sprays.

[40 CFR 60.11, 60.672(b), and 60.675]

f. If an affected facility relies on water carryover from upstream water sprays to control fugitive emissions, then that affected facility is exempt from the 5-year repeat testing requirement specified in Condition III.E.6.e provided that the affected facility meets the following criteria:

[40 CFR 60.672(b) and 60.674(b)(1)]

(1) The Permittee of the affected facility conducts periodic inspections of the upstream water spray(s) that are responsible for controlling fugitive emissions from the affected facility. These inspections shall be conducted according to Condition III.E.5.c and Condition III.E.5.e; and

(2) The Permittee of the affected facility designates which upstream water spray(s) will be periodically inspected at the time of the initial performance test required by Condition III.E.6.d.

g. In determining compliance with the particulate matter standards in Conditions III.E.2.b and III.E.2.c, the Permittee shall use Method 9 of Appendix A-4 of 40 CFR 60 and the procedures in 40 CFR 60.11, with the following additions:

[40 CFR 60.675(c)(1)]

(1) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).

[40 CFR 60.675(c)(1)(i)]

(2) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (*e.g.,* road dust). The required observer position relative to the sun (Method 9 of Appendix A-4 of 40 CFR 60, Section 2.1) must be followed.

[40 CFR 60.675(c)(1)(ii)]

(3) For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.

[40 CFR 60.675(c)(1)(iii)]

h. When determining compliance with Conditions III.E.2.b and III.E.2.c the duration of the Method 9 (40 CFR 60, Appendix A-4) observations must be 30 minutes (five 6-minute averages). Compliance with Conditions III.E.2.b and III.E.2.c must be based on the average of the five 6-minute averages.

[40 CFR 60.675(c)(3)]

i. If emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:

[40 CFR 60.675(e)(1)]

(1) Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.

(2) Separate the emissions so that the opacity of emissions from each affected facility can be read.

j. A single visible emission observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval if the following conditions are met:

[40 CFR 60.675(e)(2)]

(1) No more than three emission points may be read concurrently.

(2) All three emission points must be within a 70 degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points.

(3) If an opacity reading for any one of the three emission points equals or exceeds the applicable standard, then the observer must stop taking readings for the other two points and continue reading just that single point.

k. For performance tests involving only Method 9 (40 CFR 60 Appendix A-4) testing, the Permittee may reduce the 30-day advance notification of performance test in 40 CFR 60.7(a)(6) and 40 CFR 60.8(d) to a 7-day advance notification.

[40 CFR 60.675(g)]

IV. PORTABLE GRIZZLY SCREEN FOR PROCESSING IRON/CLINKER AND COKE PROCESSING EQUIPMENT

A. Applicability

This Section is applicable to the portable grizzly screen referenced in Section XXIII and the coke processing equipment referenced in Section XXI of the Equipment List in Attachment "D", when used for screening iron/clinker.

B. Particulate Matter and Opacity

1. Emission Limits/Standards

a. The Permittee shall not cause, suffer, allow or permit the discharge of particulate matter into the atmosphere except as fugitive emissions in any one hour from any process source, in total quantities in excess of the amounts calculated by the equations set forth below:

(1) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable particulate emissions shall be determined by the following equation:

[P.C.C. 17.16.430.A.1]

$$E = 3.59\ P^{0.62}$$

Where:

E = the maximum allowable emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour.

(2) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E = 17.31\ P^{0.16}$

Where "E" and "P" are defined as in Condition IV.B.1.a(1) above.

b. The opacity of any plume or effluent from any process source subject to the provisions of this Section shall not be greater than 20%.

[A.A.C. R18-2-702.B and P.C.C 17.16.130B]

2. Monitoring, Record keeping and Reporting Requirements

A certified Method 9 observer shall conduct the periodic opacity monitoring method specified in Condition I.A above on a monthly basis from the grizzly system, when in operation.

[A.A.C. R18-2-306.A.3.c]

C. Permit Shield

Compliance with this Section shall be deemed compliance with the P.C.C. 17.16.130.B and 17.16.430.A.1 and A.A.C. R18-2-702.B.

[A.A.C. R18-2-325]

V. ENGINES

A. Applicability

This Section applies to the existing engines listed in Section XXIV of the Equipment List in Attachment "D".

B. Engines Subject to Standards of Performance for Existing Stationary Rotating Machinery under A.A.C R18-2-719

1. Fuel Limitation

a. The Permittee shall burn only natural gas in natural gas fired engines.

[A.A.C. R18-2-306.A.2]

b. The Permittee shall burn only low sulfur diesel (not to exceed 0.8 percent sulfur) in the diesel-fired engine.

[A.A.C. R18-2-719.H]

2. Particulate Matter and Opacity

a. Emissions Limitations and Standards

(1) The Permittee shall not cause, allow or permit the emission of particulate matter, caused by combustion of fuel, from the generators into the atmosphere in excess of the amounts calculated by the following equation:

$E = 1.02\ Q^{0.769}$

where:

E = the maximum allowable particulate emission rate in pounds-mass per hour.

Q = the heat input in million Btu per hour.

[A.A.C. R18-2-719.C.1]

(2) For the purposes of Condition V.B.2.a of this attachment, the heat input shall be the aggregate heat content of all fuels whose products of combustion pass through a stack or other outlet. The total heat input of all operating fuel-burning units shall be used for determining the maximum allowable amount of particulate matter emitted.

[A.A.C. R18-2-719.B]

(3) The Permittee shall not cause, allow or permit to be emitted into the atmosphere from the generators smoke for any period greater than 10 consecutive seconds which exceeds 40% opacity. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.

[A.A.C. R18-2-719.E]

b. Monitoring, Reporting, and Recordkeeping Requirements

(1) A certified Method 9 observer shall conduct the periodic opacity monitoring method specified in Condition I.A above on a monthly basis from the stack of the diesel engine, when in operation.

[A.A.C. R18-2-306.A.3.c]

(2) The Permittee shall keep records of fuel supplier certifications containing information regarding the name of fuel supplier and lower heating value of the fuel. These records shall be made available to ADEQ upon request.

[A.A.C. R18-2-306.A.3.c and -719.I]

3. Sulfur Dioxide

a. Emission Limitations and Standards

The Permittee shall not emit or cause to emit from the diesel engine more than 1.0 pound of sulfur dioxide per million Btu.

[A.A.C. R18-2-719.F]

b. Monitoring, Recordkeeping, and Reporting Requirements

(1) For SI engines, the Permittee shall maintain records of the gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying the maximum total sulfur content of the fuel.

[A.A.C. R18-2-306.A.3.c and A.A.C. R18-2-719.I]

(2) For CI engines, the Permittee shall keep records of fuel supplier certifications or other documentation listing the sulfur content to demonstrate compliance with the sulfur content limit specified in Condition V.B.3.a of this Attachment. These records shall be made available to ADEQ upon request.

[A.A.C. R18-2-306.A.3.c and -719.I]]

(3) The Permittee shall report to the Director any daily period during which the sulfur content of the fuel being fired in the engine exceeds 0.8%.

[A.A.C. R18-2-719.J]

4. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with A.A.C. R18-2-719.B, 719.C.1, 719.E, 719.F, 719.H, 719.I and 719.J.

[A.A.C. R18-2-325]

C. Existing Emergency Engines Subject to NESHAP Requirements for Stationary Reciprocating Internal Combustion Engines (RICE) ≤ 500hp Under 40 CFR 63 Subpart ZZZZ

1. General Operating Limitations/Requirements

a. The Permittee shall comply with the applicable emission limitations and operating limitations at all times.

[40 CFR 63.6605(a)]

b. At all times the Permittee shall operate and maintain the engines, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, review of operation and maintenance

procedures, review of operation and maintenance records, and inspection of the source.

[40 CFR 63.6605(b)]

c. The Permittee shall minimize the engine time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in shall apply.

[40 CFR 63.6625(h)]

d. The Permittee shall operate and maintain the engines in accordance with manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

[40 CFR63.6625(e)(2)]

2. Fuel Requirements

For existing emergency CI stationary RICE with a site rating of more than 100 brake HP and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates for the purpose specified in Condition V.C.3.c(3) of this attachment, the Permittee shall use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel. The requirements in 40 CFR 80.510(b) include:

a. Sulfur content $\leq$ 15 ppm; and

b. Cetane index $\geq$ 40 or aromatic content $\leq$ 35% by volume

[40 CFR 63.6604(b)]

3. Operation and Maintenance Requirements

a. The Permittee shall comply with the following operation and maintenance requirements:

[40 CFR 63.6602, Table 2C of Subpart ZZZZ]

The Permittee shall change the oil and filter every 500 hours operation or annually, whichever comes first. If the Permittee prefers to extend the oil change requirement, an oil analysis program described below shall be completed. The oil analysis must be performed at the same frequency specified for changing the oil. The Permittee shall at a minimum analyze the following three parameters: Total Acid Number (for SI engines), Total Base Number (for CI engines), viscosity and water content. The condemning limits for these parameters are as follows:

(a) For the natural gas-fired engine, Total Acid Number increases by more than 3.0 milligrams of potassium

hydroxide (KOH) per gram from Total Acid Number of the oil when new.

(b) For the diesel-fired engine, Total Base Number is less than 30 percent of the Total Base Number of the oil when new.

(c) Viscosity: changed more than 20 percent from the viscosity of oil when new; and

(d) Water Content: greater than 0.5 percent by volume.

(e) If all of the above limits are not exceeded, the Permittee is not required to change the oil. If any of the above limits are exceeded, the Permittee shall change the oil within 2 business days of receiving the results of the analysis or before commencing operation, whichever is later. Records shall be kept of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program shall be part of the maintenance plan for the operation of the engine

[40 CFR 63.6625 (i) and (j), and 40 CFR Table 2C of Subpart ZZZZ]

(2) The Permittee shall, every 1,000 hours of operation or annually, whichever comes first, inspect and replace as necessary, spark plugs for SI engine, and/or air cleaner for CI engine.

[40 CFR 63, Subpart ZZZZ, Table 2C]

(3) The Permittee shall inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

[40 CFR 63, Subpart ZZZZ, Table 2C]

(4) If the emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in Conditions V.C.3.a(1) through V.C.3.a(3) , or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The work practice shall be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated.

[40 CFR 63 Subpart ZZZZ, Table 2c]

b. *The Permittee shall install non-resettable hour meters on the emergency engines if already not installed.*

[40 CFR 63.6625(f), A.A.C. R-18-2-331.A.3.c]

[Material Permit Condition identified by underline and italics]

c. The Permittee shall operate the emergency engines according to the requirements in Conditions V.C.3.c(1) and V.C.3.c(3) below. If the engine is not operated according to the requirements in Conditions V.C.3.c(1) and V.C.3.c(3) below, then the engine will not be considered an emergency engine and shall meet all requirements for non-emergency engines.

[40 CFR 63.6640(f)]

(1) There is no time limit on the use of emergency engine in emergency situations.

[40 CFR 60.6640(f)(1)]

(2) The Permittee may operate the emergency engine for the purpose of maintenance checks and readiness testing for a maximum of 100 hours per calendar year provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. The Permittee may petition the Director for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year.

[40 CFR 63.6640(f)(2)]

(3) The Permittee may operate an emergency engine for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing.

[40 CFR 63.6640(f)(3)-(4)]

4. Compliance Demonstration

The Permittee shall demonstrate continuous compliance by operating and maintaining the engines according to the manufacturer's emission-related operation and maintenance instructions; or by developing and following its own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engines in a manner consistent with good air pollution control practice for minimizing emissions.

[40 CFR 63.6640(a), 63.6655(d), 40 CFR 63 Subpart ZZZZ- Table 6, Item 9]

5. Recordkeeping Requirements

a. The Permittee shall keep records described below:

(1) Records of the occurrence and duration of each malfunction of operation (*i.e.,* process equipment) or the air pollution control and monitoring equipment.

[40 CFR 63.6655(a)(2)]

(2) Records of all required maintenance performed on the air pollution control and monitoring equipment.

[40 CFR 63.6655(a)(4)]

(3) Records of actions taken during periods of malfunction to minimize emissions in accordance with Condition V.C.1.b including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

[40 CFR 63.6655(a)(5)]

b. The Permittee shall keep records of the maintenance conducted on the engine in order to demonstrate that the engine and after-treatment control device (if any) were operated and maintained in accordance with the Permittee's maintenance plan.

[40 CFR 63.6655(e)(2)]

c. The Permittee shall keep records of the hours of operation of the RICE that is recorded through the non-resettable hour meter. Records shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in Condition V.C.3.c(3) the Permittee shall keep records of the notification of the emergency situation and the date, start time, and end time of the engine operation for these purposes.

[40 CFR 63.6655(f)]

d. The Permittee shall keep records of the parameters that are analyzed and the results of the oil analysis, if any, and the oil changes for the engine.

[40 CFR 63.6625(i) and (j)]

e. The Permittee shall report each instance in which the requirements of 40 CFR 63, Subpart ZZZZ, Table 2c were not met. These instances are deviations from the emission and operating limitations. These deviations must be reported according to Condition V.C.5.a.

[40 CFR 63.6640(b)]

f. The Permittee shall keep records in a form suitable and readily available for expeditious review. The records shall readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1).

[40 CFR 63.6660(a), (b)and (c)]

6. Reporting Requirements

a. The Permittee shall report all deviations as defined in 40 CFR 63, Subpart ZZZZ along with the semiannual compliance certifications.

[40 CFR 63.6650(f)]

b. For emergency engine with a site rating of more than 100 brake HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in Conditions V.C.3.c(3), the Permittee shall submit to the EPA Administrator and Director annually, a report according to the following requirements:
[40 CFR 63.6650(h]

(1) The report must contain the following information:

(a) Company name and address where the engine is located.
[40 CFR 63.6650(h)(1)(i)]

(b) Date of the report and beginning and ending dates of the reporting period.
[40 CFR 63.6650(h)(1)(ii)]

(c) Engine site rating and model year.
[40 CFR 63.6650(h)(1)(iii)]

(d) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.
[40 CFR 63.6650(h)(1)(iv)]

(e) Hours operated for the purpose specified in Condition V.C.3.c(3), including the date, start time, and end time for the engine operation.
[40 CFR 63.6650(h)(1)(v)]

(f) Number of hours the engine is contractually obligated to be available for the purposes specified in Conditions V.C.3.c(3).
[40 CFR 63.6650(h)(1)(vi)]

(g) If there were no deviations from the fuel requirements in 40 CFR 80.510(b) that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period.
[40 CFR 63.6650(h)(1)(viii)]

(2) The first annual report shall cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.
[40 CFR 63.6650(h)(2)]

(3) The annual report shall be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.edpa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report shall

be submitted to the EPA Administrator and Director at their respective addresses below.

(a) EPA Region IX, Director, Air Division

75th Hawthorne Street

San Francisco, CA 94105

(b) Director, Air Quality Division

1110 W. Washington Street

Phoenix, AZ 85007

[40 CFR 63.6650(h)(3)]

7. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with 40 CFR Part 63.6602, 63.6605(b), 63.6625(e), 63.6625(f), 63.6625(h), 63.6625(i), 63.6625(j), 63.6640(a), 63.6640(f), 63.6655(e)(2), 63.6655(f) and 63.6660(a), (b) and (c)

[A.A.C. R18-2-325]

D. New Non-Emergency Engines Subject to NSPS Requirement for CI ICE Under 40 CFR 60 Subpart IIII

1. Fuel Requirements

For stationary CI ICE with a displacement of less than 30 liters per cylinder that use diesel fuel, the Permittee shall use diesel fuel that meets the following requirements of 40 CFR 1090.305 for non-road diesel fuel

a. Sulfur content: 15 ppm maximum; and

b. A minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.

[40 CFR 60.4207(b)]

2. Emission Limitations and Standards

a. For 2014 model year and later Tier 4 non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder must comply with the following emission standards:

[40 CFR 60.4201(a) and 60.4204(b), and 40 CFR 1039.101]

(1) Particulate Matter (PM)

The Permittee shall limit the emissions of PM from the engine to 0.03 g/kW-hr.

(2) Carbon Monoxide (CO)

The Permittee shall limit the emissions of CO from the engine to 3.5 g/kW-hr.

(3) Nitrogen Oxides (NOx)

The Permittee shall limit the emissions of NOx from the engine to 0.67 g/kW-hr.

(4) Non-Methane Hydrocarbons (NMHC)

The Permittee shall limit the emissions of NMHC from the engine to 0.19 g/kW-hr.

b. The Permittee shall limit exhaust opacity from the engine (excluding single cylinder and constant speed engines) to not exceed:

[40 CFR 60.4201(a), 60.4204(b), and 40 CFR 1039.105]

(1) 20 percent during the acceleration mode;

(2) 15 percent during the lugging mode; and

(3) 50 percent during the peaks in either the acceleration or lugging mode.

3. Operating Requirements

a. The Permittee shall operate and maintain the engines that achieve the emission standards as required in Condition V.D.2.a of this Attachment over the entire life of the engine.

[40 CFR 60.4206]

b. If the engine is equipped with a diesel particulate filter to comply with the emission standards in Condition V.D.2.a of this Attachment. The diesel particulate filter shall be installed with a backpressure monitor that notifies the Permittee when the high backpressure limit of the engine is approached.

[40 CFR 60.4209(b)]

c. The Permittee shall operate and maintain the engine and any control device according to the manufacturer's written instructions, except as permitted by Condition V.D.4.a of this Attachment.

[40 CFR 60.4211(a)(1)]

d. The Permittee shall only change those emission related settings that are permitted by the manufacturer, except as permitted by Condition V.D.4.b of this Attachment.

[40 CFR 60.4211(a)(2)]

e. The Permittee shall meet the applicable requirements of 40 CFR Part 1068, as they apply to the Permittee.

[40 CFR 60.4211(a)(3)]

4. Compliance Requirements

a. The Permittee shall comply by purchasing an engine certified to the emission standards in Condition V.D.2.a. The engine must be installed and configured according to the manufacturer's emission related specifications, except as permitted by Condition V.D.4.b of this Attachment.

[40 CFR 60.4211(c)]

b. If the Permittee does not install, configure, operate, and maintain the engine and control device according to the manufacturer's emission related written instructions, or changes emission-related settings in a way that is not permitted by the manufacturer, the Permittee shall keep a maintenance plan and records of conducted maintenance and shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the Permittee shall conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after the Permittee changes emission-related settings in a way that is not permitted by the manufacturer.

[40 CFR 60.4211(g)(3)]

5. Recordkeeping Requirements

If the engine is equipped with a diesel particulate filter, the Permittee shall keep records of any corrective action taken after the backpressure monitor has provided notification that the high backpressure limit of the engine is approached.

[40 CFR 60.4214(c)]

6. Permit Shield

Compliance with the conditions of this Section shall be deemed compliance with 40 CFR 60.4201(a), 60.4204(b), 60.4206, 60.4207(b), 60.4209(b), 60.4211(a), 60.4211(c), 60.4211(g)(3), 60.4214(c).

[A.A.C. R18-2-325]

E. New Non-Emergency Engines Subject to the NESHAP Requirements for CI Stationary RICE Under 40 CFR 63 Subpart ZZZZ

1. Emission Limitations and Standards

a. The Permittee shall comply with the applicable emission limitations and operating limitations at all times

[40 CFR 63.6605(a)]

b. At all times, the Permittee shall operate and maintain the engines, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[40 CFR 63.6605(b)]

c. The Permittee shall minimize the engine time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in shall apply.

[40 CFR 63.6625(h)]

2. Operation and Maintenance Requirements

a. Initial Performance Tests or Compliance Demonstrations

(1) The Permittee shall conduct the initial performance test or other initial compliance demonstrations in Table 4 to 40 CFR 63 Subpart ZZZZ that is applicable within 180 days after the compliance date that is specified for the stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).

[40 CFR 63.6610(a)]

(2) An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the following conditions.

[40 CFR 63.6610(d)]

(a) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

[40 CFR 63.6610(d)(1)]

(b) The test must not be older than 2 years

[40 CFR 63.6610(d)(2)]

(c) The test must be reviewed and accepted by the EPA Administrator.

[40 CFR 63.6610(d)(3)]

(d) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

[40 CFR 63.6610(d)(4)]

(e) The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

[40 CFR 63.6610(d)(5)]

(3) If the Permittee must comply with the emission limitations and operating limitations, the Permittee shall conduct subsequent performance tests as specified in Table 3 of 40 CFR 63 Subpart ZZZZ.

[40 CFR 63.6615]

b. Performance Test Procedures

(1) The Permittee shall conduct each applicable performance test in Tables 3 and 4 of 40 CFR 63 Subpart ZZZZ.

[40 CFR 63.6620(a)]

(2) Each performance test must be conducted according to the requirements specified in Table 4 to 40 CFR 63 Subpart ZZZZ. The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load for the stationary RICE.

[40 CFR 63.6620(b)(4)]

(3) The Permittee shall conduct three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must last at least 1 hour, unless otherwise specified in 40 CFR 63 Subpart ZZZZ.

[40 CFR 63.6620(d)]

(4) The Permittee shall use Equation 1 of 40 CFR 63.6620(e)(1) to determine compliance with the percent reduction requirement.

[40 CFR 63.6620(e)(1)]

(5) The Permittee shall normalize the CO, THC, or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO2) in accordance with 40 CFR 63.6620(e)(2).

[40 CFR 63.6620(e)(2)]

(6) If the Permittee complies with the emission limitation to reduce CO and is not using an oxidation catalyst, if the Permittee

complies with the emission limitation to reduce formaldehyde and is not using NSCR, or if the Permittee complies with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and is not using an oxidation catalyst or NSCR, the Permittee shall petition the EPA Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. The Permittee shall not conduct the initial performance test until after the petition has been approved by the EPA Administrator.

[40 CFR 63.6620(f)]

(7) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.

[40 CFR 63.6620(i)]

c. Monitoring Requirements

(1) If a CEMS is used, install, operate, and maintain the CEMS to monitor CO and either O2 or CO2 according to the following requirements. For compliance with the CO emissions reduction requirement, the CEMS must be installed at both the inlet and outlet of the control device. For compliance with the CO concentration limitation requirement, the CEMS must be installed at the outlet of the control device.

[40 CFR 63.6625(a)]

(a) Install, operate, and maintain the CEMS according to the applicable performance specifications of 40 CFR Part 60, appendix B.

[40 CFR 63.6625(a)(1)]

(b) Conduct an initial performance evaluation and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in § 63.8 and according to the applicable performance specifications of 40 CFR Part

60, Appendix B as well as daily and periodic data quality checks in accordance with 40 CFR Part 60, Appendix F, procedure 1.

[40 CFR 63.6625(a)(2)]

(c) Each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. At least two data points, with each representing a different 15-minute period, are required to have a valid hour of data.

[40 CFR 63.6625(a)(3)]

(d) The CEMS data must be reduced as specified in §63.8(g)(2) and recorded in parts per million or parts per billion at 15 percent oxygen or the equivalent CO2 concentration.

[40 CFR 63.6625(a)(4)]

(2) If a continuous parameter monitoring system (CPMS) is required, as specified in Table 5 of 40 CFR 63 Subpart ZZZZ, the Permittee shall install, operate, and maintain each CPMS according to the following requirements.

[40 CFR 63.6625(b)]

(a) The Permittee shall prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraphs (1)(a) through (e) of this section. The Permittee may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (1) through (5) of this section in the site-specific monitoring plan.

[40 CFR 63.6625(b)(1)]

(i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;

[40 CFR 63.6625(b)(1)(a)]

(ii) Sampling interface (e.g., thermocouple) location such that the monitoring system will provide representative measurements;

[40 CFR 63.6625(b)(1)(b)]

(iii) Equipment performance evaluations, system accuracy audits, or other audit procedures;

[40 CFR 63.6625(b)(1)(c)]

(iv) Ongoing operation and maintenance procedures in accordance with provisions in § 63.8(c)(1)(ii) and (c)(3); and

[40 CFR 63.6625(b)(1)(d)]

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in § 63.10(c), (e)(1), and (e)(2)(i).

[40 CFR 63.6625(b)(1)(e)]

(b) The Permittee shall install, operate, and maintain each CPMS in continuous operation according to the procedures in the site-specific monitoring plan.

[40 CFR 63.6625(b)(2)]

(c) The CPMS must collect data at least once every 15 minutes (see also § 63.6635).

[40 CFR 63.6625(b)(3)]

(d) For a CPMS for measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger.

[40 CFR 63.6625(b)(4)]

(e) The Permittee shall conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in the site-specific monitoring plan at least annually.

[40 CFR 63.6625(b)(5)]

(f) The Permittee shall conduct a performance evaluation of each CPMS in accordance with the site-specific monitoring plan.

[40 CFR 63.6625(b)(6)]

3. Compliance Demonstration

a. Initial Compliance

(1) The Permittee shall demonstrate initial compliance with each emission limitation, operating limitation, and other applicable requirement according to Table 5 of 40 CFR 63 Subpart ZZZZ.

[40 CFR 63.6630(a)]

(2) During the initial performance test, the Permittee shall establish each applicable operating limitation in Table 2b of 40 CFR 63 Subpart ZZZZ.

[40 CFR 63.6630(b)]

(3) The Permittee shall submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.6645.

[40 CFR 63.6630(c)]

b. Continuous Compliance

(1) If the Permittee must comply with emission and operating limitations, the Permittee shall monitor and collect data according to this section.

[40 CFR 63.6635(a)]

(2) Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, the Permittee shall monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

[40 CFR 63.6635(b)]

(3) The Permittee may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. The Permittee shall, however, use all the valid data collected during all other periods.

[40 CFR 63.6635(c)]

c. The Permittee shall demonstrate continuous compliance with each applicable emission limitation, operating limitation, and other requirements in Tables 2a and 2b of 40 CFR 63 Subpart ZZZZ in accordance with methods specified in Table 6 of 40 CFR 63 Subpart ZZZZ.

[40 CFR 63.6640(a), 40 CFR 63 Subpart ZZZZ - Table 6, Item 9]

4. Recordkeeping Requirements

a. The Permittee shall keep records described below:

(1) A copy of each notification and report submitted to comply with this Subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status submitted.

[40 CFR 63.6655(a)(1)]

(2) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.

[40 CFR 63.6655(a)(2)]

(3) Records of performance tests and performance evaluations.

[40 CFR 63.6655(a)(3)]

(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.

[40 CFR 63.6655(a)(4)]

(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with Condition V.E.1.b of this Attachment including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

[40 CFR 63.6655(a)(5)]

b. The Permittee shall keep records in a form suitable and readily available for expeditious review. The records shall be readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1).

[40 CFR 63.6660(a), (b)and (c)]

5. Reporting Requirements

a. The Permittee shall report each instance in which the requirements of 40 CFR 63, Subpart ZZZZ, Tables 2a and 2b were not met. These instances are deviations from the emission and operating limitations. These deviations must be reported according to the requirements in Condition V.E.5.b of this Attachment.

[40 CFR 63.6640(b)]

b. The Permittee shall report each instance in which the applicable requirements in Table 8 to 40 CFR 63 Subpart ZZZZ were not met.

[40 CFR 63.6640(e)]

c. The Permittee shall submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply by the dates specified.

[40 CFR 63.6645(a)]

d. The Permittee shall submit an Initial Notification no later than 120 days after becoming subject to this subpart.

[40 CFR 63.6645(c)]

e. If a performance test is required, the Permittee shall submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin.

[40 CFR 63.6645(g)]

f. If a performance test or other initial compliance demonstration is required as specified in Tables 4 and 5 to 40 CFR 63 Subpart ZZZZ, the Permittee shall submit a Notification of Compliance Status according to § 63.9(h)(2)(ii).

[40 CFR 63.6645(h)]

(1) For each initial compliance demonstration required in Table 5 to 40 CFR 63 Subpart ZZZZ that does not include a performance test, the Permittee shall submit the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration.

[40 CFR 63.6645(h)(1)]

(2) For each initial compliance demonstration required in Table 5 to 40 CFR 63 Subpart ZZZZ that includes a performance test conducted according to the requirements in Table 3 to this subpart, the Permittee shall submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to § 63.10(d)(2).

[40 CFR 63.6645(h)(2)]

g. The Permittee shall submit compliance reports as required in Table 7 of 40 CFR 63 Subpart ZZZZ.

[40 CFR 63.6650(a)]

h. Unless the EPA Administrator has approved a different schedule for submission of reports under § 63.10(a), the Permittee shall submit each compliance report by the date in Table 7 of 40 CFR 63 Subpart ZZZZ and according to the following requirements.

[40 CFR 63.6650(b)]

(1) For semiannual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in § 63.6595.

[40 CFR 63.6650(b)(1)]

(2) For semiannual Compliance reports, the first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in § 63.6595.

[40 CFR 63.6650(b)(2)]

(3) For semiannual Compliance reports, each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

[40 CFR 63.6650(b)(3)]

(4) For semiannual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than July 31 or

January 31, whichever date is the first date following the end of the semiannual reporting period.

[40 CFR 63.6650(b)(4)]

(5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), the Permittee may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (b)(4) of this section.

[40 CFR 63.6650(b)(5)]

(6) For annual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on December 31.

[40 CFR 63.6650(b)(6)]

(7) For annual Compliance reports, the first Compliance report must be postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for your affected source in § 63.6595.

[40 CFR 63.6650(b)(7)]

(8) For annual Compliance reports, each subsequent Compliance report must cover the annual reporting period from January 1 through December 31.

[40 CFR 63.6650(b)(8)]

(9) For annual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than January 31.

[40 CFR 63.6650(b)(9)]

i. The Compliance report shall contain the following information.

[40 CFR 63.6650(c)]

(1) Company name and address.

[40 CFR 63.6650(c)(1)]

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

[40 CFR 63.6650(c)(2)]

(3) Date of report and beginning and ending dates of the reporting period.

[40 CFR 63.6650(c)(3)]

(4) If there was a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during

the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.6605(b), including actions taken to correct a malfunction.

[40 CFR 63.6650(c)(4)]

(5) If there were no deviations from any applicable emission or operating limitations, a statement that there were no deviations from the emission or operating limitations during the reporting period.

[40 CFR 63.6650(c)(5)]

(6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.

[40 CFR 63.6650(c)(6)]

j. For each deviation from an emission or operating limitation that occurs for a stationary RICE where a CMS is not used to comply with the emission or operating limitations in 40 CFR 63 Subpart ZZZZ, the Compliance report must contain the information in 40 CFR 63.6650(c)(1) through (4) and the following information.

[40 CFR 63.6650(d)]

(1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.

[40 CFR 63.6650(d)(1)]

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

[40 CFR 63.6650(d)(2)]

k. For each deviation from an emission or operating limitation occurring for a stationary RICE where a CMS is being used to comply with the emission and operating limitations, the Permittee shall include the following information.

[40 CFR 63.6650(e)]

(1) The date and time that each malfunction started and stopped.

[40 CFR 63.6650(e)(1)]

(2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.

[40 CFR 63.6650(e)(2)]

(3) The date, time, and duration that each CMS was out-of-control, including the information in § 63.8(c)(8).
[40 CFR 63.6650(e)(3)]

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.
[40 CFR 63.6650(e)(4)]

(5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.
[40 CFR 63.6650(e)(5)]

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.
[40 CFR 63.6650(e)(6)]

(7) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.
[40 CFR 63.6650(e)(7)]

(8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.
[40 CFR 63.6650(e)(8)]

(9) A brief description of the stationary RICE.
[40 CFR 63.6650(e)(9)]

(10) A brief description of the CMS.
[40 CFR 63.6650(e)(10)]

(11) The date of the latest CMS certification or audit.
[40 CFR 63.6650(e)(11)]

(12) A description of any changes in CMS, processes, or controls since the last reporting period.
[40 CFR 63.6650(e)(12)]

l. For each CEMS or CPMS, the Permittee shall keep the following records.
[40 CFR 63.6655(b)]

(1) Records described in § 63.10(b)(2)(vi) through (xi).
[40 CFR 63.6655(b)]

(2) Previous (i.e., superseded) versions of the performance evaluation plan as required in § 63.8(d)(3).
[40 CFR 63.6655(b)]

(3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in § 63.8(f)(6)(i), if applicable.

[40 CFR 63.6655(b)]

m. The Permittee shall keep the records required in Table 6 of 40 CFR 63 Subpart ZZZZ to show continuous compliance with each applicable emission or operating limitation.

[40 CFR 63.6655(d)]

6. Permit Shield

Compliance with the conditions of this Section shall be deemed compliance with 40 CFR Part 63.6602, 63.6605(b), 63.6625(e), 63.6625(f), 63.6625(h), 63.6625(i), 63.6625(j), 63.6640(a), 63.6640(f), 63.6655(e)(2), 63.6655(f) and 63.6660(a), (b) and (c).

[A.A.C. R18-2-325]

VI. FUEL BURNING EQUIPMENT

A. Applicability

This Section applies to all boilers and heaters listed in Section XXIV of Equipment List in Attachment "D" of this permit.

B. Fuel Limitation

The Permittee shall only burn natural gas in all the heaters and boilers.

[A.A.C. R18-2-306.01.A and -331.A.3.a]
[Material Permit Condition is indicated by underline and italics]

C. Particulate Matter and Opacity

1. Emission Limits/Standards

a. The Permittee shall not cause, allow, or permit the emission of particulate matter, caused by combustion of fuel, from any fuel burning operation subject to this Section, in excess of the amounts calculated by one of the following equations:

[A.A.C. R18-2-724.C]

(1) For equipment having a heat input rate of 4,200 million BTU per hour or less, the maximum allowable emissions shall be determined by the following equation:

$$E = 1.02\ Q^{0.769}$$

where

E = the maximum allowable particulate emission in pounds-mass per hour,

Q = the heat input rate in million BTU per hour.

(2) For equipment having a heat input rate greater than 4,200 million BTU per hour, the maximum allowable emissions shall be determined by the following equation:

$E = 17.0\ Q^{0.432}$

where

(3) E and Q have the same meaning as in Condition VI.C.1.a(1) above.

b. For purposes of this Part the heat input shall be the aggregate heat content of all fuels whose products of combustion pass through a stack or other outlet. The total heat input of all fuel-burning units on a plant or premises shall be used for determining the maximum allowable amount of particulate matter which may be emitted.

[A.A.C. R18-2-724.B]

c. The Permittee shall not cause the emission of any plume from process sources subject to this Section, whose opacity is greater than 15 percent, as determined by EPA Reference Method 9 of 40 CFR Part 60, Appendix A.

[A.A.C. R18-2-724.J]

2. Monitoring, Record keeping, and Reporting Requirements

a. The Permittee shall keep records of fuel supplier certifications to demonstrate compliance. The certification shall contain information regarding the name of fuel supplier and lower heating value of the fuel. These records shall be made available to ADEQ upon request.

[A.A.C. R18-2-306.A.3.c]

b. The Permittee shall report all 6-minute periods during which the visible emissions exceed 15 percent opacity, as required under Section XI of Attachment "A".

[A.A.C. R18-2-724.J]

3. Permit Shield

Compliance with this Section shall be deemed compliance with A.A.C. R18-2-724.B, A.A.C R18-2-724.C, and A.A.C R18-2-724.J.

[A.A.C. R18-2-325]

D. NESHAP Subpart DDDDD Requirements

1. Applicability

a. This Part is applicable to the following boilers and process heaters identified in Attachment "D":

(1) Bunker C Boiler (6.275 MMBtu/hour)

(2) D4-RM1-HTR (75 MMBtu/hour)

[40 CFR 63.7495(b)]

b. The Permittee shall comply with the requirements of this Part no later than January 31, 2016.

[40 CFR 63.7495(b)]

2. Boiler Tune-ups

a. Initial Tune- ups

The Permittee shall conduct a performance tune-up for each affected boiler and heater according to the procedure described in Condition VI.D.2.c(1) no later than the compliance date of January 31, 2016.

[40 CFR 63.7510(e)]

b. Subsequent Tune-ups

(1) The Permittee shall conduct a subsequent tune- up annually for each affected facility with a heat input capacity of 10 MMBtu/hour or greater according to the procedure described in Condition VI.D.2.c(1). The annual tune-up shall be conducted within 13 months of the previous tune-up.

[40 CFR 63.7500(a), 7515(d), and Table 3, Item 3]

~~(1)~~(2) The Permittee shall conduct a subsequent tune- up every ~~five~~ two years for each affected facility with a heat input capacity of ~~less~~ greater than ~~or equal to~~ 5 MMBtu/hour and less than 10 MMBtu/hour according to the procedure described in Condition VI.D.2.c(1). The ~~five year~~biennial tune-up shall be conducted within ~~61~~ 25 months of the previous tune-up.

[40 CFR 63.7500(a), 63.7500(e), 7515(d), and Table 3, Item ~~1~~2]

c. Tune-up Procedure

(1) The Permittee shall conduct initial and periodic tune-up required according to the following steps:

[40 CFR 63.7540(a)(10)]

(a) Inspect the burner, and clean or replace any components of the burner as necessary. The Permittee may delay the burner inspection until the next scheduled unit shutdown;

[40 CFR 63.7540(a)](10)(i)]

(b) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

[40 CFR 63.7540(a)](10)(ii)]

(c) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly. The Permittee may delay the burner inspection until the next scheduled unit shutdown;
[40 CFR 63.7540(a)](10)(iii)]

(d) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject;
[40 CFR 63.7540(a)](10)(iv)]

(e) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and
[40 CFR 63.7540(a)](10)(v)]

(f) Maintain on-site and submit, if requested by the EPA Administrator, a~~n annual~~ report containing the information below:
[40 CFR 63.7540(a)](10)(vi)]

(i) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;
[40 CFR 63.7540(a)](10)(vi)(A)]

(ii) A description of any corrective actions taken as a part of the tune-up; and
[40 CFR 63.7540(a)](10)(vi)(B)]

(iii) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.
[40 CFR 63.7540(a)](10)(vi)(C)]

(2) If any affected boiler or process heater has a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour, the Permittee must conduct a tune-up of the boiler or process heater every 5 years as specified in Condition VI.D.2.c(1)(a) through (f) to demonstrate continuous compliance. The Permittee may delay

the burner inspection specified in Condition VI.D.2.c(1)(a) until the next scheduled or unscheduled unit shutdown, but shall inspect each burner at least once every 72 months.

[40 CFR 63.7540(a)](12)]

(3) If the affected boiler or heater is not operating on the required date for a tune-up, the Permittee shall conduct tune-up within 30 calendar days of startup.

[40 CFR 63.7540(a)](13)]

3. One-Time Energy Assessment

a. The Permittee shall conduct a one-time energy assessment for the affected boilers and heaters according to the procedure described in Condition VI.D.3.b. This shall be conducted by the compliance date of January 31, 2016.

[40 CFR 63.7510(e)]

b. The Permittee shall have a one-time energy assessment performed by a qualified energy assessor. An energy assessment completed on or after January 1, 2008, that meets or is amended to meet the energy assessment requirements in Item #4 of Table 3, satisfies the energy assessment requirement as required in Conditions VI.D.3.a. The Energy Assessment shall be conducted according to the following steps:

[40 CFR 63.7500(a)(1)] and Table 3- Item 4]

(1) A visual inspection of the boiler or process heater system;

[40 CFR 63.7500(a)(1) and Table 3-Item- 4.a]

(2) An evaluation of operating characteristics of the boiler or process heater systems, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints.

[40 CFR 63.7500(a)(1) and Table 3-Item- 4.b]

(3) An inventory of major energy use systems consuming energy from affected boilers and process heaters and which are under the control of the boiler/process heater owner/operator.

[40 CFR 63.7500(a)(1) and Table 3-Item- 4.c]

(4) A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.

[40 CFR 63.7500(a)(1) and Table 3-Item- 4.d]

(5) A review of the facility's energy management practices and provide recommendations for improvements consistent with the definition of energy management practices, if identified.

[40 CFR 63.7500(a)(1) and Table 3-Item- 4.e]

(6) A list of cost-effective energy conservation measures that are within the facility's control.

[40 CFR 63.7500(a)(1) and Table 3-Item- 4.f]

(7) A list of the energy savings potential of the energy conservation measures identified.

[40 CFR 63.7500(a)(1) and Table 3-Item- 4.g]

(8) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

[40 CFR 63.7500(a)(1) and Table 3-Item- 4.h]

4. Notification and Reporting Requirements

a. The Permittee shall submit to the EPA Administrator all of the applicable notifications in 40 CFR 63.7(b) and (c), 63.8(e), (f)(4) and (6), and 63.9(b) through (h) by the dates specified.

[40 CFR 63.7545(a)]

b. The Permittee shall submit a Notification of Compliance Status report containing all the applicable information specified below:

[40 CFR 63.7545(e)]

(1) A description of the affected unit(s) including identification of which subcategories the unit is in, the design heat input capacity of the unit, a description of the add-on controls used on the unit to comply with 40 CFR 63, Subpart DDDDD, description of the fuel(s) burned, and justification for the selection of fuel(s) burned during the compliance demonstration.

[40 CFR 63.7545(e)(1)]

(2) A signed certification that the Permittee has met all applicable work practice standards.

[40 CFR 63.7545(e)(6)]

(3) In the event of a deviation, the Permittee shall submit a description of the deviation, the duration of the deviation, and the corrective action taken in the Notification of Compliance Status report.

[40 CFR 63.7545(e)(7)]

(4) In addition to the information required in §63.9(h)(2), the Permittee shall, in the notification of compliance status, include the following certification(s) of compliance, as applicable, and signed by a responsible official:

[40 CFR 63.7545(e)(8)]

(a) This facility complies with the required initial tune-up according to the procedures in Condition VI.D.2.c(1).

[40 CFR 63.7545(e)(8)(i)]

(b) This facility complies with the required energy assessment performed according to the procedures in Condition VI.D.3.b.

[40 CFR 63.7545(e)(8)(ii)]

(5) The Permittee shall submit a Compliance report semiannually, annually, biennially, or every 5 years according to the requirements in 40 CFR 63.7550(b).

[40 CFR 63.7550(b) and Item 1, Table 9]

(a) The first compliance report shall cover the period from the compliance date to January 31 or July 31, whichever date is the first date that occurs at least 180 days (or 1. 2, or 5 years, as applicable, if submitting an annual, biennial, or 5-year compliance report) after the compliance date of January 31, 2016.

[40 CFR 63.7550 (b)(1)]

(b) The first compliance report shall be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the compliance date of January 31, 2016. The first annual, biennial, or 5-year compliance report must be postmarked or submitted no later than January 31.

[40 CFR 63.7550(b)(2)]

(c) Each subsequent compliance report shall cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Annual, biennial, and 5-year compliance reports must cover the applicable 1, 2, or 5 year periods from January 1 to December 31.

[40 CFR 63.7550(b)(3)]

(d) Each subsequent compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period. Annual, biennial, and 5year compliance reports must be postmarked or submitted no later than January 31.

[40 CFR 63.7550(b)(4)]

(6) The Compliance report shall contain the following information:

[40 CFR 63.7550(c)(5)]

(a) Company and Facility name and address.

[40 CFR 63.7550(c)(5)(i)]

(b) Process unit information, emissions limitations, and operating parameter limitations.

[40 CFR 63.7550(c)(5)(ii)]

(c) Date of report and beginning and ending dates of the reporting period.

[40 CFR 63.7550(c)(5)(iii)]

(d) The total operating time during the reporting period.
[40 CFR 63.7550(c)(5)(iv)]

(e) The date of the most recent tune-up for each unit subject to only the requirement to conduct an annual, biennial, or 5-year tune-up according to Conditions VI.D.2.b(1) and (2). The report shall include the date of the most recent burner inspection if it was not done annually or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown.
[40 CFR 63.7550(c)(5)(xiv)]

(7) The Permittee shall submit all reports electronically using CEDRI that is accessed through the EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the Permittee shall submit the report to the EPA Administrator at the appropriate address listed in 40 CFR 63.13. At the discretion of the EPA Administrator, the Permittee shall also submit these reports, to the EPA Administrator in the format specified by the EPA Administrator.
[40 CFR 63.7550(h)(3)]

5. Recordkeeping Requirements

a. The Permittee shall maintain the following records:
[40 CFR 63.7555(a)]

(1) A Copy of each notification and report submitted in accordance with Condition VI.D.4.
[40 CFR 63.7555(a)(1)]

(2) Of compliance demonstrations and performance evaluations as required in 40 CFR 63.10(b)(2)(viii).
[40 CFR 63.7555(a)(2)]

(3) Of the calendar date, time, occurrence and duration of each startup and shutdown.
[40 CFR 63.7555(i)]

(4) Of the type(s) and amount(s) of fuels used during each startup and shutdown.
[40 CFR 63.7555(j)]

b. The Permittee shall maintain the records in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1).
[40 CFR 63.7560(a)]

c. The Permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record in accordance with 40 CFR 63.10(b)(1).

[40 CFR 63.7560(b)]

d. The Permittee shall keep each record on site, or they must be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1). The Permittee can keep the records off site for the remaining 3 years.

[40 CFR 63.7560(c)]

6. Permit Shield

Compliance with this Part shall be deemed compliance with 40 CFR 63.7495(b), 63.7500(a) and (e), 63.7510(e), 63.7515 (d), 63.7540(a)(10), (12) and (13), 63.7545(a) and (e), 63.7550(b) and (c), 63.7555(a), (i) and (j), 63.7560(a) through (c).

[A.A.C. R18-2-325]

VII. GASOLINE STORAGE TANK

A. Applicability

This Section applies to the gasoline storage tank listed in Section XXV of Equipment List in Attachment "D" of this permit.

B. Operating Limitations

1. The gasoline storage tank shall be equipped with a submerged filling device or acceptable equivalent, for control of hydrocarbon emissions.

[A.A.C. R18-2-710.B]

2. All pumps and compressors that handle gasoline shall be equipped with mechanical seals or other equipment of equal efficiency to prevent release of organic contaminants into the atmosphere.

[A.A.C. R18-2-710.D]

C. Monitoring and Recordkeeping Requirements

The Permittee shall, for the gasoline storage tank, maintain a file, of the typical Reid vapor pressure of gasoline stored and of dates of storage. Records of the dates on which the storage vessel is empty shall be maintained.

[A.A.C. R18-2-710.E.1]

D. Permit Shield

Compliance with this Section shall be deemed compliance with A.A.C. R18-2-724.B, A.A.C R18-2-710.B, A.A.C R18-2-710.D and A.A.C R18-2-710.E.1.

[A.A.C. R18-2-325]

VIII. DIESEL/USED OIL TANKS

A. Applicability

The Section is applicable to diesel storage tank, used oil tanks, bunker C oil tank and lube oil tank listed in Section XXV of Equipment List in Attachment "D" of this permit.

B. Volatile Organic Compounds (VOCs)

1. The storage tank shall be equipped with a submerged filling device or acceptable equivalent, for control of hydrocarbon emissions.

[A.A.C. R18-2-306.A.2]

2. All pumps and compressors that handle volatile organic compounds shall be equipped with mechanical seals or other equipment of equal efficiency to prevent release of organic contaminants into the atmosphere.

[A.A.C. R18-2-306.A.2]

3. Materials including solvents or other volatile compounds, and other chemicals utilized in the processes under this Section shall be processed, stored, used, and transported in such a manner and by means that they will not evaporate, leak, escape or be otherwise discharged into the ambient air so as to cause or contribute to air pollution. Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage or discharge, the installation and use of such control methods, devices, or equipment shall be mandatory.

[A.A.C. R18-2-730.F]

4. Where a stack, vent or other outlet is at such a level that fumes, gas mist, odor, smoke, vapor or any combination thereof constituting air pollution is discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent, or other outlet by the Permittee to a degree that will adequately dilute, reduce or eliminate the discharge of air pollution to adjoining property.

[A.A.C. R18-2-730.G]

C. Permit Shield

Compliance with the Section shall be deemed compliance with A.A.C. R18-2-730.F and G.

[A.A.C. R18-2-325]

IX. OTHER PERIODIC ACTIVITIES

A. Abrasive Blasting

1. Particulate Matter and Opacity

a. Emission Limitations/Standards

The Permittee shall not cause or allow sandblasting or other abrasive blasting without minimizing dust emissions to the atmosphere through the use of good modern practices. Good modern practices include:

[A.A.C. R18-2-726]

(1) Wet blasting;

(2) Effective enclosures with necessary dust collecting equipment; or

(3) Any other method approved by the Director.

b. Opacity

The Permittee shall not cause, allow or permit visible emissions from sandblasting or other abrasive blasting operations in excess of 20% opacity.

[A.A.C. R18-2-702.B.3]

2. Monitoring and Recordkeeping Requirement

Each time an abrasive blasting project is conducted, the Permittee shall make a record of the following:

[A.A.C. R18-2-306.A.3.c]

a. The date the project was conducted;

b. The duration of the project; and

c. Type of control measures employed.

3. Permit Shield

Compliance with Condition IX.A.1.a shall be deemed compliance with A.A.C. R18-2-702.B.3 and -726.

[A.A.C.R18-2-325]

B. Use of Paints

1. Volatile Organic Compounds

a. Emission Limitations/Standards

While performing spray painting operations, the Permittee shall comply with the following requirements:

(1) The Permittee shall not conduct or cause to be conducted any spray painting operation without minimizing organic solvent emissions. Such operations, other than architectural coating and spot painting, shall be conducted in an enclosed area equipped with controls containing no less than 96 percent of the overspray.

[A.A.C.R18-2-727.A]

(2) The Permittee or their designated contractor shall not either:

[A.A.C.R18-2-727.B]

(a) Employ, apply, evaporate, or dry any architectural coating containing photochemically reactive solvents for industrial or commercial purposes; or

(b) Thin or dilute any architectural coating with a photochemically reactive solvent.

(3) For the purposes of Condition IX.B.1.a(1), a photochemically reactive solvent shall be any solvent with an aggregate of more than 20 percent of its total volume composed of the chemical compounds classified in Condition IX.B.1.a(2), or which exceeds any of the following percentage composition limitations, referred to the total volume of solvent:

[A.A.C.R18-2-727.C]

(a) A combination of the following types of compounds having an olefinic or cyclo-olefinic type of unsaturation-hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones: 5 percent.

(b) A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene: 8 percent.

(c) A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: 20 percent.

(4) Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the groups of organic compounds described in Condition IX.B.1.a(2), it shall be considered to be a member of the group having the least allowable percent of the total volume of solvents.

[A.A.C.R18-2-727.D]

b. Monitoring and Recordkeeping Requirements

[A.A.C. R18-2-306.A.3.c]

(1) Each time a spray painting project is conducted, the Permittee shall make a record of the following:

(a) The date the project was conducted;

(b) The duration of the project;

(c) Type of control measures employed;

(d) Safety Data Sheets (SDS) for all paints and solvents used in the project; and

(e) The amount of paint consumed during the project.

(2) Architectural coating and spot painting projects shall be exempt from the recordkeeping requirements of Condition IX.B.1.b(1).

c. Permit Shield

Compliance with Condition IX.B.1.a shall be deemed compliance with A.A.C.R18-2-727.

[A.A.C.R18-2-325]

2. Opacity

a. Emission Limitation/Standard

The Permittee shall not cause, allow or permit visible emissions from painting operations in excess of 20% opacity.

[A.A.C. R18-2-702.B.3]

b. Permit Shield

Compliance with Condition IX.B.2.a shall be deemed compliance with A.A.C.R18-2-702.B.3.

[A.A.C. R18-2-325]

C. Demolition and ~~/~~Renovation - Hazardous Air Pollutants

1. Emission Limitation and Standard

The Permittee shall comply with all of the requirements of 40 CFR 61 Subpart M National Emissions Standards for Hazardous Air Pollutants - Asbestos.

[A.A.C. R18-2-1101.A.12]

2. Monitoring and Recordkeeping Requirement

The Permittee shall keep all required records in a file. The required records shall include the "NESHAP Notification for Renovation and Demolition Activities" form and all supporting documents.

[A.A.C. R18-2-306.A.3.c]

3. Permit Shield

Compliance with Condition IX.C.1 shall be deemed compliance with A.A.C. R18-2-1101.A.12.

[A.A.C. R18-2-325]

X. CONCRETE BATCH PLANT REQUIREMENTS

A. Applicability

This Section applies to concrete batch plant operations.

B. Opacity

1. Emission Limitations and Standards

a. The Permittee shall not cause, allow, or permit visible emissions from any point source, in excess of 20 percent opacity.

[A.A.C. R18-2-702.B.1]

b. The Permittee shall not cause, allow or permit visible emissions from nonpoint sources in excess of 40 percent opacity as measured by EPA Reference Method 9.

[A.A.C. R18-2-614]

c. Operating Requirements

The Permittee shall control fugitive dust emitted from the concrete batch plant in accordance with Section II of this Attachment.

[A.A.C. R18-2-723]

C. Monitoring, Recordkeeping, and Reporting Requirements

The Permittee shall conduct bi-weekly opacity monitoring for the concrete batch plant as per Condition I.A of this Attachment.

[A.A.C. R18-2-306.A.3.c]

D. Permit Shield

Compliance with the Conditions of this Section shall be deemed compliance with A.A.C. R18-2-614, -702.B.1, and -723.

[A.A.C. R18-2-325]

~~X.~~XI. AMBIENT MONITORING REQUIREMENTS

If the monitored daily average concentration at the ADEQ PM_{10} monitoring site is greater than 150 $\mu g/m^3$ the Department may notify the Permittee of the exceedance and request a demonstration that the facility's operations did not cause or contribute to the exceedance. Within 30 days of the notification, the Permittee shall provide to the Director an evaluation as to whether any event (including upset conditions) at the facility may have caused or contributed to the exceedance.

ATTACHMENT "C": REQUIREMENTS FOR CEMENT PLANT

I. APPLICABILITY

A. The Attachment is applicable to the Coal mill system and Portland cement plant.

B. The following affected sources in this attachment are subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements under 40 CFR 63 Subpart LLL:

[40 CFR 63.1340(b)]

1. Each kiln;
2. Each clinker cooler;
3. Each raw mill;
4. Each finish mill;
5. Each raw material dryer;
6. Each raw material, clinker, or finished product storage bin;
7. Each conveying system transfer point including those associated with coal preparation used to convey coal from the mill to the kiln;
8. Each bagging and bulk loading and unloading system; and
9. Each open clinker storage pile

C. Definitions

1. "Operating day" means any 24-hour period beginning at 12:00 midnight during which the kiln-produces any amount of clinker. For calculating the rolling 30-day average emissions, kiln operating days do not include the hours of operation during startup or shutdown.

[40 CFR 63.1341]

2. "Rolling average" means the weighted average of all data, meeting QA/QC requirements or otherwise normalized, collected during the applicable averaging period. The period of a rolling average stipulates the frequency of data averaging and reporting. To demonstrate compliance with an operating parameter a 30-day rolling average period requires calculation of a new average value each operating day and shall include the average of all the hourly averages of the specific operating parameter. For demonstration of compliance with an emission limit based on pollutant concentration a 30-day rolling average is comprised of the average of all the hourly average concentrations over the previous 30 operating days. For demonstration of compliance with an emissions limit based on lbs-pollutant per production unit the 30-day rolling average is calculated by summing

the hourly mass emissions over the previous 30 operating days, then dividing that sum by the total production during the same period.

[40 CFR 63.1341]

3. The 30-day period means all operating hours within 30 consecutive kiln operating days excluding periods of startup and shutdown.

[40 CFR 63.1343(a)]

D. Compliance Requirements

1. Compliance with the hydrogen chloride (HCl) and mercury (Hg) requirements in Sections VI.E and F of this Attachment shall be effective September 9, 2016.

[40 CFR 63.6(i)(4)(i)(A)]

2. Schedule of Compliance for HCI

   a. On a quarterly basis, the Permittee shall query calibration gas suppliers on the availability of the NIST-traceable HCI calibration gases and record the information obtained.

   b. Certified progress reports will be submitted to the ADEQ on a semi-annual basis detailing the availability of calibration gases, and updated information on the certification progress of the HCI CEMS, if any.

   c. Upon receipt of procurement date for NIST-traceable HCI calibration gases, the Permittee shall notify the Department of the following information:

      (1) The approximate date that HCI gases will be delivered to the facility;

      (2) The approximate date for submittal of the Relative Accuracy Test Audit (RATA) protocol to ADEQ; and

      (3) The scheduled HCI CEMS RATA performance test date.

3. Schedule of Compliance for Mercury

   a. On a quarterly basis, the Permittee shall query calibration gas suppliers on the availability of the NIST-traceable mercury calibration gas and record the information obtained.

   b. Certified progress reports will be submitted to the ADEQ on a semi-annual basis detailing the availability of calibration gas, and updated information on the certification progress of the mercury CEMS, if any.

   c. Upon receipt of a procurement date for NIST-traceable mercury calibration gases, the Permittee shall notify the Department of the following information:

(1) The approximate date that mercury calibration gases will be delivered to the facility;

(2) The approximate date for submittal of the Relative Accuracy Test Audit (RATA) protocol; and

(3) The scheduled HCI CEMS RATA performance test date.

II. GENERAL NESHAP REQUIREMENTS

A. Operation and Maintenance Requirements

1. Operation and maintenance requirements established in this permit pursuant to Section 112 of the Act are enforceable independent of emissions limitations or other requirements in relevant standards.

[40 CFR 63.6(e)(1)(iii)]

2. The Permittee shall prepare, for each affected source subject to the provisions of 40 CFR 63 Subpart LLL a written operations and maintenance plan. The operations and maintenance plan shall include the following information:

[40 CFR 63.1347(a)]

a. Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emission limits and operating limits including fugitive dust control measures for open clinker piles under 40 CFR 63 Subpart LLL;

[40 CFR 63.1347(a)(1)

b. Corrective actions to be taken when required by Condition VII.B.4.e of Attachment "C";

[40 CFR 63.1347(a)(2)

c. Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year.

[40 CFR 63.1347(a)(3)

d. The operation and maintenance plan shall also address periods of startup and shutdown.

[40 CFR 63.1347(a)(1)

3. Failure to comply with any provision of the operations and maintenance plan developed in accordance with this section is a violation of the standard.

[40 CFR 63.1347(b)]

4. *At all times, the Permittee shall operate and* maintain *any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.* Determination of whether such operation and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, review of operation

and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[40 CFR 63.1348(d) and A.A.C. R18-2-331.A.3.b & c]
[Material permit conditions are indicated by underline and italics]

B. General Monitoring Requirements

1. General requirements for Continuous Monitoring Systems

a. The Permittee shall demonstrate compliance with the monitoring requirements in this Attachment on a continuous basis.

[40 CFR 63.1350(a)(1)]

b. For each existing unit that is equipped with a Continuous Monitoring System (CMS), the Permittee shall maintain the average emissions or the operating parameter values within the operating parameter limits established through performance tests.

[40 CFR 63.1350(a)(3]

c. Any instance where the Permittee fails to comply with the continuous monitoring requirements of this Attachment shall be a violation.

[40 CFR 63.1350(a)(4)]

d. The Permittee must monitor and collect data according to §63.1350 and the site-specific monitoring plan required by Condition II.B.6 below.

[40 CFR 63.1348(b)(1)(i)]

e. Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee shall operate the monitoring system and collect data at all required intervals at all times the affected source is operating.

[40 CFR 63.1348(b)(1)(ii)]

f. The Permittee shall not use data recorded during monitoring system malfunctions or repairs associated with monitoring system malfunctions in calculations used to report emissions or operating levels. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. The Permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system.

[40 CFR 63.1348(b)(1)(iii)]

2. General Requirements for Parametric Monitoring Requirements

a. *For any operating limit that requires use of CMS, the Permittee shall install,* operate, and maintain *each continuous parameter monitoring system (CPMS) according to the following procedures:*

[40 CFR 63.1350(m), A.A.C. R18-2-331.A.3.c]
[Material permit conditions are indicated by underline and italics]

(1) The CPMS shall complete a minimum of one cycle of operation for each successive 15-minute period. The Permittee shall have a minimum of four successive cycles of operation to have a valid hour of data.

(2) The Permittee shall conduct all monitoring in continuous operation at all times that the unit is operating.

(3) The Permittee shall determine the 1-hour block average of all recorded readings.

(4) The Permittee shall record the results of each inspection, calibration, and validation check

[40 CFR 63.1350(m)(1)-(4)]

b. In addition to the above, the Permittee shall comply with specific parametric requirements under 40 CFR 63.1350(m)(5) through (11), as applicable.

[40 CFR 63.1350(m)]

3. General Requirements for Continuous Flow Rate Monitoring Systems

The Permittee shall install, calibrate, operate and maintain *instruments for continuously measuring and recording the stack gas flow rate to allow determination of the pollutant mass emissions rate to the atmosphere from sources subject to an emissions limitation that has a pounds per ton of clinker unit and that is required to be monitored by a CEMS.*

[40 CFR 63.1350(n), A.A.C. R18-2-331.A.3.c]
[Material permit conditions are indicated by underline and italics]

a. The Permittee shall install each sensor of the flow rate monitoring system in a location that provides representative measurement of the exhaust gas flow rate at the sampling location of the mercury CEMS, taking into account the manufacturer's recommendations. The flow rate sensor is that portion of the system that senses the volumetric flow rate and generates an output proportional to that flow rate.

[40 CFR 63.1350(n)(1)]

b. The flow rate monitoring system shall be designed to measure the exhaust flow rate over a range that extends from a value of at least 20 percent less than the lowest expected exhaust flow rate to a value of at least 20 percent greater than the highest expected exhaust flow rate.

[40 CFR 63.1350(n)(2)]

c. The flow rate monitoring system shall be equipped with a data acquisition and recording system that is capable of recording values over the entire range specified in Condition II.B.3.b above.

[40 CFR 63.1350(n)(4)]

d. The signal conditioner, wiring, power supply, and data acquisition and recording system for the flow rate monitoring system shall be compatible with the output signal of the flow rate sensors used in the monitoring system.

[40 CFR 63.1350(n)(5)]

e. The flow rate monitoring system shall be designed to complete a minimum of one cycle of operation for each successive 15-minute period.

[40 CFR 63.1350(n)(6)]

f. The flow rate sensor shall have provisions to determine the daily zero and upscale calibration drift (CD) (Refer Sections 3.1 and 8.3 of Performance Specification 2 in Appendix B to 40 CFR Part 60).

(1) Conduct the CD tests at two reference signal levels, zero (e.g., 0 to 20 percent of span) and upscale (e.g., 50 to 70 percent of span).

(2) The absolute value of the difference between the flow monitor response and the reference signal shall be equal to or less than 3 percent of the flow monitor span.

[40 CFR 63.1350(n)(7)(i)-(ii)]

g. The Permittee shall perform an initial relative accuracy test of the flow rate monitoring system according to Section 8.2 of Performance Specification 6 of Appendix B to 40 CFR Part 60 with the following exceptions:

(1) The relative accuracy test is to evaluate the flow rate monitoring system alone rather than a continuous emission rate monitoring system.

(2) The relative accuracy of the flow rate monitoring system shall be no greater than 10 percent of the mean value of the reference method data.

[40 CFR 63.1350(n)(8)(i)-(ii)]

h. The Permittee shall verify the accuracy of the flow rate monitoring system at least once per year by repeating the relative accuracy test specified in Condition II.B.3.g above.

[40 CFR 63.1350(n)(9)]

i. The Permittee shall operate the flow rate monitoring system and record data during all periods of operation of the affected facility including periods of startup, shutdown, and malfunction, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).

[40 CFR 63.1350(n)(10)]

4. Alternate Monitoring Requirements Approval

5. The Permittee may submit an application to the EPA Administrator for approval of alternate monitoring requirements to demonstrate compliance with the emission standards subject to the provisions of 40 CFR 63.1350(o)(1) through (6).

[40 CFR 63.1350(o)]

6. Development and Submittal of Monitoring Plans

If the Permittee demonstrates compliance with any applicable emissions limit through performance stack testing or other emissions monitoring, the Permittee shall develop a site-specific monitoring plan according to the requirements in 40 CFR 63.1350(p)(1) – (4). This requirement also applies if the Permittee petitions the EPA Administrator for alternative monitoring parameters under Condition II.B.4 above and 40 CFR 63.8(f).

[40 CFR 63.1350(p)]

C. Startup and Shutdown Requirements

1. The Permittee shall operate all air pollution control devices including during periods of startup and shutdown.

[40 CFR 63.1348(b)(9)]

2. Specific Requirements for Kiln

The Permittee shall meet the following requirements during startup and shutdown of kiln.

[40 CFR 63.1346(g)]

a. During startup the Permittee shall use any one or combination of the following clean fuels: natural gas, synthetic natural gas, propane, distillate oil, synthesis gas (syngas), and ultra-low sulfur diesel (ULSD) until the kiln reaches a temperature of 1200 degrees Fahrenheit.

[40 CFR 63.1346(g)(1)]

b. Combustion of the primary kiln fuel shall commence once the kiln temperature reaches 1200 degrees Fahrenheit.

[40 CFR 63.1346(g)(2)]

c. All dry sorbent and activated carbon systems that control hazardous air pollutants shall be turned on and operating at the time the gas stream at the inlet to the baghouse or ESP reaches 300 degrees Fahrenheit (five minute average) during startup. Temperature of the gas stream shall be measured at the inlet of the baghouse or ESP every minute. Such injection systems can be turned off during shutdown. Particulate control and all remaining devices that control hazardous air pollutants should be operational during startup and shutdown.

[40 CFR 63.1346(g)(3)]

d. The Permittee shall keep records as specified in Section II.G of Attachment “C” during periods of startup and shutdown.

[40 CFR 63.1346(g)(4)]

D. General Performance Testing Requirements

1. The Permittee shall demonstrate initial compliance with the emissions standards and operating limits by using the test methods and procedures in this Attachment. The first day of the 30 operating day performance test is the first day after the compliance date following completion of the field testing and data collection that demonstrates that the CPMS or CEMS has satisfied the relevant CPMS performance evaluation or CEMS performance specification (e.g., PS 2, 12A, or 12B) acceptance criteria. The performance test period is complete at the end of the 30th consecutive operating day. The Permittee has the option of performing the compliance test earlier then the compliance date if desired.

[40 CFR 63.1348(a)]

2. Performance tests shall be conducted under such conditions as the Director specifies to the Permittee based on representative performance of the affected source for the period being tested. Upon request, the Permittee shall make available to the Director such records as may be necessary to determine the conditions of performance tests. The Permittee shall make available to the Director prior to testing, if requested, the site-specific test plan to be followed during performance testing.

[40 CFR 63.1349(a) and (e)]

3. Performance test results shall be documented in complete test reports that contain the following information, as well as all other relevant information. The site-specific plan to be followed during performance testing must be made available to the Director prior to testing, if requested.

[40 CFR 63.1349(a)]

   a. A brief description of the process and the air pollution control system;

   b. Sampling location description(s);

   c. A description of sampling and analytical procedures and any modifications to standard procedures;

   d. Test results;

   e. Quality assurance procedures and results;

   f. Records of operating conditions during the performance test, preparation of standards, and calibration procedures;

   g. Raw data sheets for field sampling and field and laboratory analyses;

   h. Documentation of calculations;

   i. All data recorded and used to establish parameters for monitoring; and

j. Any other information required by the performance test method.

4. Changes in Operations

a. If the Permittee plans to undertake a change in operations that may adversely affect compliance with an applicable standard, operating limit, or parametric monitoring value, the Permittee shall conduct a performance test as specified in §63.1349(b).

[40 CFR 63.1348(c)(1)]

b. In preparation for and while conducting a performance test, the Permittee may operate under the planned operational change conditions for a period not to exceed 360 hours, provided that the following conditions are met. The Permittee shall submit temperature and other monitoring data that are recorded during the pretest operations.

(1) The Permittee shall provide the Director written notice at least 60 days prior to undertaking an operational change that may adversely affect compliance with an applicable standard under this subpart for any source, or as soon as practicable where 60 days advance notice is not feasible. The notice shall include a description of the planned change, the emissions standards that may be affected by the change, and a schedule for completion of the performance test, including when the planned operational change period would begin.

(2) The performance test results shall be documented in a test report according to Condition II.D.3 above.

(3) A test plan shall be made available to the Director prior to performance testing, if requested.

(4) The performance test shall be completed within 360 hours after the planned operational change period begins.

[40 CFR 63.1348(c)(2)(i)-(iv)]

5. The Permittee shall submit the information specified the following information no later than 60 days following the initial performance test. All reports shall be signed by the responsible official.

a. The initial performance test data; and

b. The values for the site-specific operating limits or parameters established, as applicable, and a description, including sample calculations, of how the operating parameters were established during the initial performance test

[40 CFR 63.1349(d)(1)]

6. Within 60 days after the date of completing each performance evaluation or test, as defined in 40 CFR 63.2, conducted to demonstrate compliance with any standards under 40 CFR 63 Subpart LLL, the Permittee shall submit the relative

accuracy test audit data and performance test data, except opacity data, to EPA by successfully submitting the data electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT). (S*ee http://www.epa.gov/ttn/chief/ert/ert_tool.html*)

[40 CFR 63.1349(d)(2)]

E. Notification requirements

The Permittee shall comply with the notification requirements in 40 CFR 63.9 as follows:

1. Initial notifications as required by 40 CFR 63.9(b) through (d);

2. Notification of performance tests, as required by 40 CFR 63.7 and 63.9(e);

3. Notification of opacity and visible emission observations required by 40 CFR 63.1349 in accordance with 40 CFR 63.6(h)(5) and 63.9(f);

4. Notification, as required by 40 CFR 63.9(g), of the date that the continuous emission monitor performance evaluation required by 40 CFR 63.8(e) is scheduled to begin;

5. Notification of compliance status, as required by 40 CFR 63.9(h); and

6. Within 48 hours of an exceedance that triggers retesting to establish compliance and new operating limits, the Permittee shall notify the Director of the planned performance tests. The notification requirements of 40 CFR 63.7(b) and 63.9(e) do not apply to retesting required for exceedances under 40 CFR 63 Subpart LLL.

[40 CFR 63.1353(b)]

F. Reporting Requirements

1. The Permittee shall comply with the reporting requirements specified in 40 CFR 63 subpart A as follows:

[40 CFR 63.1354(b)]

a. As required by 40 CFR 63.10(d)(2), the Permittee shall report the results of performance tests as a part of the notification of compliance status.

[40 CFR 63.1354(b)(1)]

b. As required by 40 CFR 63.10(d)(3), the Permittee shall report the opacity results from tests required by 40 CFR 63 Subpart LLL.

[40 CFR 63.1354(b)(2)]

c. As required by 40 CFR 63.10(d)(4), the Permittee who is required to submit progress reports as a condition of receiving an extension of compliance under 40 CFR 63.6(i) shall submit such reports by the dates specified in the written extension of compliance.

[40 CFR 63.1354(b)(3)]

d. As required by 40 CFR 63.10(e)(2), the Permittee shall submit a written report of the results of the performance evaluation for the continuous

monitoring system required by 40 CFR 63.8(e). The Permittee shall submit the report simultaneously with the results of the performance test.

[40 CFR 63.1354(b)(6)]

e. As required by 40 CFR 63.10(e)(2), the Permittee using a continuous opacity monitoring system to determine opacity compliance during any performance test required under 40 CFR 63.7 and described in 40 CFR 63.6(d)(6) shall report the results of the continuous opacity monitoring system performance evaluation conducted under 40 CFR 63.8(e).

[40 CFR 63.1354(b)(7)]

f. As required by 40 CFR 63.10(e)(3), the Permittee equipped with a continuous emission monitor shall submit an excess emissions and continuous monitoring system performance report for any event when the continuous monitoring system data indicate the source is not in compliance with the applicable emission limitation or operating parameter limit.

[40 CFR 63.1354(b)(8)]

g. The Permittee shall submit a summary report semiannually within 60 days of the reporting period to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (https://cdx.epa.gov/). The Permittee shall use the appropriate electronic report in CEDRI for this subpart. Instead of using the electronic report in CEDRI for this subpart, the Permittee may submit an alternate electronic file consistent with the extensible markup language (XML) schema listed on the CEDRI website (https://www.epa.gov/electronic-reporting-air-emissions/compliance-and-emissions-data-reporting-interface-cedri), once the XML schema is available. If the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the Permittee shall submit the report the EPA Administrator at the appropriate address listed in §63.13. The Permittee shall begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI. The excess emissions and summary reports must be submitted no later than 60 days after the end of the reporting period, regardless of the method in which the reports are submitted. The report must contain the information specified in §63.10(e)(3)(vi). In addition, the summary report shall include:

[40 CFR 63.1354(b)(9)]

(1) All exceedances of maximum control device inlet gas temperature limits specified in Conditions VI.C.2.a and VI.C.2.b of this Attachment;

[40 CFR 63.1354(b)(9)(i)]

(2) Notification of any failure to calibrate thermocouples and other temperature sensors as required under Condition VI.C.3.a(1)(c) of this Attachment; and

[40 CFR 63.1354(b)(9)(ii)]

(3) Notification of any failure to maintain the activated carbon injection rate, and the activated carbon injection carrier gas flow rate or pressure drop, as applicable, as required under Condition VI.C.2.c(2) of this Attachment.

[40 CFR 63.1354(b)(9)(iii)]

(4) Notification of failure to conduct any combustion system component inspections conducted within the reporting period as required under Condition II.A.2.c of this Attachment.

[40 CFR 63.1354(b)(9)(iv)]

(5) Any and all failures to comply with any provision of the operation and maintenance plan developed in accordance with Condition II.A.2 of this Attachment.

[40 CFR 63.1354(b)(9)(v)]

(6) For each PM CPMS, HCl, Hg, and THC CEMS, SO_2 CEMS, or Hg sorbent trap monitoring system, within 60 days after the reporting periods, the Permittee report all of the calculated 30-operating day rolling average values derived from the CPMS, CEMS, CMS, or Hg sorbent trap monitoring systems.

[40 CFR 63.1354(b)(9)(vi)]

(7) In response to each deviation from an emissions standard or established operating parameter limit, the date, duration and description of each deviation and the specific actions taken for each deviation including inspections, corrective actions and repeat performance tests and the results of those actions.

[40 CFR 63.1354(b)(9)(vii)]

h. If the total continuous monitoring system downtime for any CEM or any CMS for the reporting period is ten percent or greater of the total operating time for the reporting period, the Permittee shall submit an excess emissions and continuous monitoring system performance report along with the summary report.

[40 CFR 63.1354(b)(10)]

i. The Permittee shall submit the information specified in paragraphs Conditions II.F.1.i(1) and II.F.1.i(2) below no later than 60 days following the initial performance test. All reports must be signed by a responsible official.

(1) The initial performance test data as recorded under Condition II.D.3 above.

[40 CFR 63.1354(b)(11)(i)(A)]

(2) The values for the site-specific operating limits or parameters established pursuant to §63.1349(b)(1), (3), (6), (7), and (8), as applicable, and a description, including sample calculations, of how the operating parameters were established during the initial performance test.

[40 CFR 63.1354(b)(11)(i)(B)]

(3) As of December 31, 2011, and within 60 days after the date of completing each performance evaluation or test, as defined in §63.2, conducted to demonstrate compliance with any standard covered by this subpart, the Permittee shall submit the relative accuracy test audit (RATA) data and performance test data, except opacity data, to the EPA by successfully submitting the data electronically via CEDRI and by using the Electronic Reporting Tool (ERT) (see https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert). For any performance evaluations with no corresponding RATA pollutants listed on the ERT website, the Permittee shall submit the results of the performance evaluation to the EPA Administrator at the appropriate address listed in §63.13.

[40 CFR 63.1354(b)(11)(i)(C)]

j. For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report shall also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (e.g. beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp signals corresponding to each PM compliance test run.

[40 CFR 63.1354(b)(11)(ii)]

k. All reports required by 40 CFR 63 Subpart LLL not subject to the requirements in Conditions II.F.1.g and II.F.1.i above must be sent to the EPA Administrator at the appropriate address listed in 40 CFR 63.13. The EPA Administrator or the delegated authority may request a report in any form suitable for the specific case (e.g., by commonly used electronic media such as Excel spreadsheet, on CD or hard copy). The EPA Administrator retains the right to require submittal of reports subject to Conditions II.F.1.g and II.F.1.i above in paper format.

[40 CFR 63.1354(b)(12)]

2. For each failure to meet a standard or emission limit caused by a malfunction at an affected source, the Permittee shall report the failure in the semiannual compliance report required in Condition II.F.1.g above. The report shall contain the date, time and duration, and the cause of each event (including unknown cause, if applicable), and a sum of the number of events in the reporting period. The report shall list for each event the affected source or equipment, an estimate of the volume of each regulated pollutant emitted over the emission limit for which the source failed to meet a standard, and a description of the method used to estimate the emissions. The report shall also include a description of actions taken by the Permittee during a malfunction of an affected source to minimize emissions in accordance with Condition II.A.4 including actions taken to correct a malfunction.

[40 CFR 63.1354(c)]

G. Recordkeeping requirements

1. The Permittee shall maintain files of all information (including all reports and notifications) recorded in a form suitable and readily available for inspection and review as required by 40 CFR 63.10(b)(1). The files shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two years of data shall be retained on site. The remaining three years of data may be retained off site. The files may be maintained on microfilm, on a computer, on floppy disks, on magnetic tape, or on microfiche.

[40 CFR 63.1355(a)]

2. The Permittee shall maintain records for each affected source as required by 40 CFR 63.10(b)(2) and (b)(3); and

   a. All documentation supporting initial notifications and notifications of compliance status under 40 CFR 63.9;

   b. All records of applicability determination, including supporting analyses; and

   c. If the Permittee has been granted a waiver under 40 CFR 63.8(f)(6), any information demonstrating whether the Permittee is meeting the requirements for a waiver of recordkeeping or reporting requirements.

[40 CFR 63.1355(b)(1)-(3)]

3. In addition to the recordkeeping requirements in Condition II.G.2 above, the Permittee shall maintain all records required by 40 CFR 63.10(c) for the continuous monitoring systems.

[40 CFR 63.1355(c)]

4. The Permittee shall keep records of the daily clinker production rates according to the clinker production monitoring requirements in §63.1350(d).

[40 CFR 63.1355(e)]

5. The Permittee shall keep records of the date, time and duration of each startup or shutdown period for any affected source that is subject to a standard during startup or shutdown that differs from the standard applicable at other times, and the quantity of feed and fuel used during the startup or shutdown period.

[40 CFR 63.1355(f)]

6. The Permittee shall keep records of the date, time and duration of each malfunction that causes an affected source to fail to meet an applicable standard; if there was also a monitoring malfunction, the date, time and duration of the monitoring malfunction; the record must list the affected source or equipment, an estimate of the volume of each regulated pollutant emitted over the standard for which the source failed to meet a standard, and a description of the method used to estimate the emissions.

[40 CFR 63.1355(g)(1)]

7. The Permittee shall keep records of actions taken during periods of malfunction to minimize emissions in accordance with Condition II.A.4 including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

[40 CFR 63.1355(g)(2)]

8. For each exceedance from an emissions standard or established operating parameter limit, the Permittee shall keep records of the date, duration and description of each exceedance and the specific actions taken for each exceedance including inspections, corrective actions and repeat performance tests and the results of those actions.

[40 CFR 63.1355(h)]

9. The Permittee shall keep records of periods of operations of Clinker Bypass Bin, H2-SB1.

[A.A.C R18-2-306.A.3.c]

H. Permit Shield

Compliance with the requirements of this Section shall be deemed compliance with 40 CFR 66.1346(g), 63.1347(a) & (b), 63.1348(a), (b), (c) & (d),63.1349(a),(d) & (e), 63.1350(a), (m), (n), (o) & (p), 63.1353(b), 66.1354(b) & (c), and 63.1355,

[A.A.C. R18-2-325]

III. COAL PREPARATION/COAL MILL SYSTEMS

A. Applicability

This Section is applicable to process sources identified Sections XIII and Sections XXI of the Equipment List in Attachment "D".

B. Equipment Subject to Non-NSPS Requirements

1. Particulate Matter and Opacity

a. Emission Limitations and Standards

(1) The Permittee shall not cause, allow or permit the discharge of particulate matter from the equipment that commenced construction on or before October 27, 1974, and that did not commence modifications after October 27, 1974, into the atmosphere, in any one hour from any coal preparation plant in total quantities in excess of the amounts calculated by one of the following equations:

[P.C.C. 17.16.310.B]

(a) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable particulate emissions shall be determined by the following equation:

$E = 3.59 \times P^{0.62}$

Where:

E = the maximum allowable emissions rate in pounds per hour.

P = the process weight rate in tons per hour.

(b) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation**:**

$E = 17.31 \times P^{0.16}$

Where "E" and "P" are defined as in Condition III.B.1.a(1)(a) above.

(2) The Permittee shall not cause or allow to be emitted into the atmosphere from any existing source subject to this Section any gases which exhibit opacity greater than 20 percent as determined by EPA Reference Method 9 in Appendix A to 40 CFR Part 60.

[A.A.C. R18-2-702.B]

2. Air Pollution Control Requirements

a. *The Permittee shall operate all equipment in a manner consistent with good air pollution control practice for minimizing particulate matter emissions from the process sources subject to this Part.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306.A.2, A.A.C. R18-2-331.A.3.e and A.A.C. R18-2-331.B]
[Material Permit Condition is indicated by underline and italics]

b. The Permittee shall control fugitive emissions from process sources subject to this Part in accordance with the methods listed in Condition II.B.1.c of Attachment "B".

[A.A.C. R18-2-716.E]

3. Monitoring, Recordkeeping and Reporting Requirements

The Permittee shall conduct a Visible Emissions Observation Procedure, as described in Condition II.B.3.b of Attachment "B", for non-point sources, and fugitive emissions.

[A.A.C. R18-2-306.A.3.c]

4. Permit Shield

Compliance with the requirements of this Part shall be deemed compliance with P.C.C. 17.16.310.B, A.A.C. R18-2-702.B.1, A.A.C. R18-2-716.E,

[A.A.C. R18-2-325]

C. Equipment subject to NSPS Requirements

1. Applicability

This Part is applicable to coal processing and conveying equipment (including breakers and crushers), and coal storage systems, transfer and loading systems constructed or modified after October 27, 1974.

[40 CFR 60.250(b)]

2. Particulate Matter and Opacity

a. Emission Limitations and Standards

(1) The Permittee shall not cause to be discharged into the atmosphere from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal that was constructed, reconstructed, or modified on or before April 28, 2008, gases which exhibit 20 percent opacity or greater.

[40 CFR 60.254(a)]

(2) For coal processing and conveying equipment, coal storage systems, or coal transfer and loading systems processing coal that were constructed, reconstructed, or modified after April 28, 2008, the Permittee shall meet the requirements in Conditions III.C.2.a(2)(a) through III.C.2.a(2)(c) below, as applicable.

[40 CFR 60.254(b)]

(a) Except as provided in Condition III.C.2.a(2)(c) below, the Permittee shall not cause to be discharged into the atmosphere from the affected facility any gases which exhibit 10 percent opacity or greater.

[40 CFR 60.254(b)(1)]

(b) Equipment used in the loading, unloading, and conveying operations of open storage piles are not subject to the opacity limitations of Condition III.C.2.a(2)(a) above.

[40 CFR 60.254(b)(3)]

3. Air Pollution Control Requirements

a. *At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.* Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the EPA Administrator which may include, but is not limited

to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

[40 CFR 60.11(d), A.A.C. R18-2-331.A.3.e]
[Material Permit Condition is indicated by underline and italics]

b. *The Permittee shall operate the air dust collectors H3-K4-DC1 & H3-K4-DC2 in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331.A.3.e and A.A.C. R18-2-331.B]
[Material Permit Condition is indicated by underline and italics]

4. Compliance Requirements

a. The Permittee shall conduct all performance tests required by 40 CFR 60.8 to demonstrate compliance with the applicable emission standards using the methods identified in Condition III.C.5.

[40 CFR 60.255(a)]

b. For the equipment constructed or modified after April 28, 2008, the Permittee shall conduct repeat performance tests according to the following requirements:

(1) If any 6-minute average opacity reading in the most recent performance test exceeds half the applicable opacity limit, a new performance test must be conducted within 90 operating days of the date that the previous performance test was required to be completed.

[40 CFR 60.255(b)(2)(i)]

(2) If all 6-minute average opacity readings in the most recent performance test are equal to or less than half the applicable opacity limit, a new performance test shall be conducted within 12 calendar months of the date that the previous performance test was required to be completed.

[40 CFR 60.255(b)(2)(ii)]

c. The Permittee shall prepare and operate in accordance with a submitted fugitive coal dust emissions control plan that is appropriate for the site conditions as specified in Conditions III.C.4.c(1) through III.C.4.c(6) below.

[40 CFR 60.254(c)]

(1) The fugitive coal dust emissions control plan must identify and describe the control measures the Permittee will use to minimize fugitive coal dust emissions from each open storage pile.

[40 CFR 60.254(c)(1)]

(2) For open coal storage piles, the fugitive coal dust emissions control plan must require that one or more of the following control measures be used to minimize to the greatest extent practicable fugitive coal dust: Locating the source inside a partial enclosure, installing and operating a water spray or fogging system, applying appropriate chemical dust suppression agents on the source (when the provisions of Condition III.C.4.c(6) are met), use of a wind barrier, compaction, or use of a vegetative cover. The Permittee shall select, for inclusion in the fugitive coal dust emissions control plan, the control measure or measures listed in this condition that are most appropriate for site conditions. The plan must also explain how the measure or measures selected are applicable and appropriate for site conditions. In addition, the plan must be revised as needed to reflect any changing conditions at the source.

[40 CFR 60.254(c)(2)]

(3) The Permittee may petition the Director to approve, for inclusion in the plan for the affected facility, alternative control measures other than those specified in Condition III.C.4.c(2) as specified in Conditions III.C.4.c(3)(a) through (d).

[40 CFR 60.254(c)(3)]

(a) The petition must include a description of the alternative control measures, a copy of the fugitive coal dust emissions control plan for the affected facility that includes the alternative control measures, and information sufficient for ADEQ to evaluate the demonstrations required by Condition III.C.4.c(3)(b).

[40 CFR 60.254(c)(3)(i)]

(b) The Permittee must either demonstrate that the fugitive coal dust emissions control plan that includes the alternate control measures will provide equivalent overall environmental protection or demonstrate that it is either economically or technically infeasible for the affected facility to use the control measures specifically identified in Condition III.C.4.c(2).

[40 CFR 60.254(c)(3)(ii)]

(c) While the petition is pending, the Permittee must comply with the fugitive coal dust emissions control plan including the alternative control measures submitted with the petition. Operation in accordance with the plan submitted with the petition shall be deemed t o constitute compliance with the requirement to operate in accordance with a fugitive coal dust emissions control plan that contains one of the control measures specifically identified in Condition III.C.4.c(2)while the petition is pending.

[40 CFR 60.254(c)(3)(iii)]

(d) If the petition is approved by the Director, the alternative control measures will be approved for inclusion in the fugitive coal dust emissions control plan for the affected facility. In lieu of amending this subpart, a letter will be sent to the Permittee describing the specific control measures approved. The Permittee shall make any such letters and the applicable fugitive coal dust emissions control plan available to the public. If the Director determines it is appropriate, the conditions and requirements of the letter can be reviewed and changed at any point.

[40 CFR 60.254(c)(3)(iv)]

(4) The Permittee must submit the fugitive coal dust emissions control plan to the Director or delegated authority as specified in Conditions III.C.4.c(4)(a) and (b).

[40 CFR 60.254(c)(4)]

(a) The plan must be submitted to the Director prior to startup of the new, reconstructed, or modified affected facility.

[40 CFR 60.254(c)(4)(i)]

(b) The plan must be revised as needed to reflect any changing conditions at the source. Such revisions must be dated and submitted to the Director before a source can operate pursuant to these revisions. The Director may also object to such revisions as specified in Condition III.C.4.c(5).

[40 CFR 60.254(c)(4)(ii)]

(5) The Director may object to the fugitive coal dust emissions control plan as specified in Condition III.C.4.c(5)(a) and (b).

[40 CFR 60.254(c)(5)]

(a) The Director may object to any fugitive coal dust emissions control plan that it has determined does not meet the requirements of Condition III.C.4.c(4)(a) and (b).

[40 CFR 60.254(c)(5)(i)]

(b) If an objection is raised, the Permittee, within 30 days from receipt of the objection, must submit a revised fugitive coal dust emissions control plan to the Director. The Permittee must operate in accordance with the revised fugitive coal dust emissions control plan. The Director retains the right, under Condition III.C.4.c(5), to object to the revised control plan if it determines the plan does not meet the requirements of Condition III.C.4.c(4)(a) and (b).

[40 CFR 60.254(c)(5)(ii)]

(6) Where appropriate chemical dust suppression agents are selected by the Permittee as a control measure to minimize fugitive coal dust emissions, (1) only chemical dust suppressants with Occupational Safety and Health Administration (OSHA)-compliant safety data sheets (MSDS) are to be allowed; (2) the SDS must be included in the fugitive coal dust emissions control plan; and (3) the Permittee must consider and document in the fugitive coal dust emissions control plan the site-specific impacts associated with the use of such chemical dust suppressants.
[40 CFR 60.254(c)(6)]

5. Performance Test Requirements

a. The Permittee shall use Method 9 of appendix A–4 of 40 CFR 60 to determine opacity with the following exceptions.

(1) The duration of the Method 9 performance test shall be 1 hour (ten 6-minute averages).

(2) If, during the initial 30 minutes of the observation of a Method 9 performance test, all of the 6-minute average opacity readings are less than or equal to half the applicable opacity limit, then the observation period may be reduced from 1 hour to 30 minutes.
[40 CFR 60.257(a)(1)(i)-(ii)]

b. To determine opacity for fugitive coal dust emissions sources, the following additional requirements shall be used.

(1) The minimum distance between the observer and the emission source shall be 5.0 meters (16 feet), and the sun shall be oriented in the 140-degree sector of the back.
[40 CFR 60.257(a)(2)(i)]

(2) The observer shall select a position that minimizes interference from other fugitive coal dust emissions sources and make observations such that the line of vision is approximately perpendicular to the plume and wind direction.
[40 CFR 60.257(a)(2)(ii)]

(3) The observer shall make opacity observations at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. Water vapor is not considered a visible emission.
[40 CFR 60.257(a)(2)(iii)]

c. A visible emissions observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval if the following conditions are met.

(1) No more than three emissions points may be read concurrently.

(2) All three emissions points must be within a 70 degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points.

(3) If an opacity reading for any one of the three emissions points is within 5 percent opacity from the applicable standard (excluding readings of zero opacity), then the observer must stop taking readings for the other two points and continue reading just that single point.

[40 CFR 60.257(a)(3)(i)-(iii)]

6. Recordkeeping and Reporting Requirements

These requirements are applicable for affected facilities constructed or modified after April 28, 2008.

[40 CFR 60.258]

a. The Permittee shall maintain in a logbook (written or electronic) on-site and make it available upon request. The logbook shall record the following:

(1) The manufacturer's recommended maintenance procedures and the date and time of any maintenance and inspection activities and the results of those activities. Any variance from manufacturer recommendation, if any, shall be noted.

[40 CFR 60.258(a)(1)]

(2) The date and time of periodic coal preparation and processing plant visual observations, noting those sources with visible emissions along with corrective actions taken to reduce visible emissions. Results from the actions shall be noted.

[40 CFR 60.258(a)(2)]

(3) The amount and type of coal processed each calendar month.

[40 CFR 60.258(a)(3)]

(4) Monthly certification that the fugitive coal dust emissions control plan was implemented as described. Any variance from the plan, if any, shall be noted. A copy of the applicable fugitive coal dust emissions control plan and any letters from the Director providing approval of any alternative control measures shall be maintained with the logbook. Any actions, e.g. objections, to the plan and any actions relative to the alternative control measures, e.g. approvals, shall be noted in the logbook as well.

[40 CFR 60.258(a)(6)]

b. The Permittee shall report semiannually periods of excess emissions (i.e., all 6-minute average opacities that exceed the applicable standard).

[40 CFR 60.258(b)(3)]

c. The Permittee shall submit the results of initial performance tests to the Director.

[40 CFR 60.258(c)]

d. After July 1, 2011, within 60 days after the date of completing each opacity performance tests, the Permittee must mail a summary copy to United States Environmental Protection Agency; Energy Strategies Group; 109 TW Alexander DR; mail code: D243–01; RTP, NC 27711.

[40 CFR 60.258(d)]

7. Permit Shield

Compliance with the requirements of this Part shall be deemed compliance with 40 CFR 60.254(a) & (b), 60.255(a) & (b)(2), 60.257(a)(1) through (3), and 60.258.

[A.A.C. R18-2-325]

D. NESHAP Requirements under 40 CFR 63 Subpart LLL

1. Emission Standards

The Permittee shall not cause to be discharged into the atmosphere from any conveying system transfer point from any coal mill to the kiln any gases which exhibit greater than 10 percent opacity.

[40 CFR 63.1340(b)(7), 40 CFR 63.1348]

2. Opacity Monitoring Requirements

The Permittee shall conduct required opacity monitoring in accordance with the provisions of Conditions III.D.2.a through III.D.2.g below and in accordance with the monitoring plan developed under Condition II.B.6 of Attachment "C".

[40 CFR 63.1350(f)(1)]

a. The Permittee shall conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22 of Appendix A–7 to 40 CFR 60. The performance test must be conducted while the affected source is in operation.

[40 CFR 63.1350(f)(1)(i)]

b. If no visible emissions are observed in six consecutive monthly tests for any affected source, the Permittee may decrease the frequency of performance testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, the Permittee shall resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

[40 CFR 63.1350(f)(1)(ii)]

c. If no visible emissions are observed during the semi-annual test for any affected source, the Permittee may decrease the frequency of performance testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual performance test, the Permittee

shall resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

[40 CFR 63.1350(f)(1)(iii)]

d. If visible emissions are observed during any Method 22 performance test, the Permittee shall conduct 30 minutes of opacity observations, recorded at 15-second interval in accordance with Method 9 of Appendix A–4 to 40 CFR 60. The Method 9 performance test shall begin within 1 hour of any observation of visible emissions.

[40 CFR 63.1350(f)(1)(iv)]

e. The requirements to conduct Method 22 visible emissions monitoring do not apply to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. The enclosures for these transfer points shall be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.

[40 CFR 63.1350(f)(1)(v)]

f. If any partially enclosed or unenclosed conveying system transfer point is located in a building, the Permittee shall conduct a Method 22 performance test according to the requirements of Conditions III.D.2.a and III.D.2.d above for each such conveying system transfer point located within the building, or for the building itself, according to Condition III.D.2.g below.

[40 CFR 63.1350(f)(1)(vi)]

g. If visible emissions from a building are monitored, the requirements of Conditions III.D.2.a and III.D.2.d above apply to the monitoring of the building, and, the Permittee must also test visible emissions from each side, roof, and vent of the building for at least 10 minutes.

[40 CFR 63.1350(f)(1)(vii)]

3. Performance Testing Requirements

a. For the dust collectors H3-K4-DC1 & -DC2, to demonstrate compliance with the opacity standard, the Permittee shall conduct performance test in once the permit term in accordance with EPA Reference Method 9 of 40 CFR Part 60, Appendix A.

[40 CFR 63.1349(b)(2)]

b. The maximum 6-minute average opacity exhibited during the test period shall be used to determine whether the affected source is in initial compliance with the opacity standard.

[40 CFR 63.1349(b)(2)]

c. The duration of the Method 9 performance test shall be 3 hours (thirty 6-minute averages), except that the duration of the Method 9 performance test may be reduced to 1 hour if following Conditions are met:

(1) There are no individual readings greater than 10 percent opacity;

(2) There are no more than three readings of 10 percent for the first 1-hour period.

[40 CFR 63.1349(b)(2)(i)-(ii)]

4. Permit Shield

Compliance with the requirements of this Part shall be deemed compliance with 40 CFR 63.1347(b)(7), 63.1348, 63.1349(b)(2), 63.1350(f)(1).

[A.A.C. R18-2-325]

IV. OPEN CLINKER PILES

A. Standards for Open Clinker Piles

The Permittee shall operate an open clinker pile in accordance with the fugitive dust emissions control measures that are appropriate for the site conditions and described in the operation and maintenance plan under Condition II.A.2 of Attachment "C".

[40 CFR 63.1343(c)]

B. Requirements for Operation and Maintenance Plan

1. The operations and maintenance plan shall describe the measures the Permittee will use to minimize fugitive dust emissions from piles of clinkers, such as accidental spillage, that are not part of open clinker storage piles.

[40 CFR 63.1343(c)]

2. The operation and maintenance plan shall identify and describe the location of each current or future open clinker storage pile and the fugitive dust emissions control measures the Permittee shall use to minimize fugitive dust emissions from each open clinker storage pile.

[40 CFR 63.1343(c)(1)]

3. For open clinker storage piles, the operations and maintenance plan shall specify that one or more of the following control measures will be used to minimize to the greatest extent practicable fugitive dust from open clinker storage piles:

[40 CFR 63.1343(c)(2)]

a. Locating the source inside a partial enclosure;

b. Installing and operating a water spray or fogging system;

c. Applying appropriate chemical dust suppression agents; and

d. Use of a wind barrier, compaction, use of tarpaulin or other effective cover, or use of a vegetative cover.

4. The Permittee shall select, for inclusion in the operations and maintenance plan, the fugitive dust control measure or measures listed above that are most appropriate for site conditions. The plan shall also explain how the measure or

measures selected are applicable and appropriate for site conditions. In addition, the plan shall be revised as needed to reflect any changing conditions at the source.

[40 CFR 63.1343(c)(2)]

5. Temporary piles of clinker that result from accidental spillage or clinker storage cleaning operations shall be cleaned up within 3 days.

[40 CFR 63.1343(c)(3)]

C. Permit Shield

Compliance with the conditions of this Section shall be deemed compliance with 40 CFR 1343(c).

[A.A.C. R18-2-325]

V. CLINKER PRODUCTION

A. Monitoring Requirements

The Permittee shall determine hourly clinker production by one of following two methods:

1. *The Permittee shall install, calibrate,* maintain, and operate *a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of clinker produced. The system of measuring hourly clinker production must be maintained within ±5 percent accuracy.*

[40 CFR 63.1350(d)(1)(i) and A.A.C. R18-2-331.A.3.c]
[Material permit conditions are indicated by underline and italics]

2. *The Permittee shall install, calibrate*, maintain, and operate *a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of feed to the kiln. The system of measuring feed shall be maintained within ±5 percent accuracy.* The Permittee shall calculate the hourly clinker production rate using a kiln-specific feed to clinker ratio based on reconciled clinker production determined for accounting purposes and recorded feed rates. The Permittee shall update this ratio monthly. If this ratio changes at clinker reconciliation, the Permittee shall use the new ratio going forward, but the Permittee shall not have to retroactively change clinker production rates previously estimated.

[40 CFR 63.1350(d)(1)(ii) and A.A.C. R18-2-331.A.3.c]
[Material permit conditions are indicated by underline and italics]

B. Recordkeeping Requirements

1. During each quarter of the operation, the Permittee shall determine, record, and maintain a record of the ongoing accuracy of the system of measuring hourly clinker production or feed mass flow rates.

[40 CFR 63.1350(d)(2)]

2. The Permittee shall maintain records of hourly kiln feed rates and hourly clinker production rates.

[40 CFR 63.1348(b)(1)(iv), 40 CFR 63.1350(d)(3)]

3. The Permittee shall keep records of the daily clinker production rates and kiln feed rates.

[40 CFR 63.1355(e)]

C. Permit Shield

Compliance with the conditions of this Section shall be deemed compliance with 40 CFR 63.1348(b)(1), 63.1350(d)(1) through (3), and 63.1355(e).

[A.A.C. R18-2-325]

VI. KILNS AND CLINKER COOLERS

A. This Section is applicable to the process sources identified in Section XI, XII, XIII and XIV of the Equipment List in Attachment "D".

B. Particulate Matter and Opacity

1. Emission Standards

a. Kilns:

(1) The Permittee shall not cause to be discharged into the atmosphere from any kiln any gases which contain particulate matter in excess of 0.07 pounds per ton clinker.

[40 CFR 63.1343(b)(1), 40 CFR 63.1356, 40 CFR 60.62(d)]

(2) The Permittee shall not cause, allow or permit the discharge of particulate matter from Kilns 1, 2, and 3~~, and 4~~ to exceed the amounts calculated by one of the following equations:

[A.A.C R18-2-705.B]

(a) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$E = 4.10\ P^{0.67}$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour.

(b) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$$E = 55.0P^{0.11} - 40$$

where "E" and "P" are defined as indicated in Condition VI.B.1.a(2)(a) above.

(3) The Permittee shall not cause to be discharged into the atmosphere from Kilns 1, 2, and 3~~, and 4~~ any gases which exhibit opacity greater than 20 percent.

[A.A.C R18-2-705.C]

(4) The Permittee shall not cause to be discharged into the atmosphere from Dust Collector H5-5-GB for Kilns 1, 2 and 3, and H5-GB for in-line kiln/raw mill Kiln 4 any gases which contain PM_{10} in excess of 0.008 gr/dscf.

[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition VI.C]

b. Clinker Coolers:

(1) The Permittee shall not cause to be discharged into the atmosphere from any clinker cooler, any gases which contain particulate matter in excess of 0.07 pounds per ton clinker.

[40 CFR 63.1343(b)(1), 40 CFR 63.1356, 40 CFR 60.62(d)]

(2) The Permittee shall not cause, allow or permit the discharge of particulate matter from the clinker coolers for Kilns 1, 2, and 3~~, and 4~~ to exceed the amounts calculated by the equations in Condition VI.B.1.a(2) above:

[A.A.C R18-2-705.B]

(3) The Permittee shall not cause to be discharged into the atmosphere from the clinker coolers for Kilns 1, 2, 3, and 4 any gases which exhibit opacity greater than 20 percent.

[A.A.C R18-2-705.C]

2. Air Pollution Control Requirements

a. *At all times, including periods of startup, shutdown, and malfunction, the Permittee shall operate and maintain all the Dust Collectors H5-5-GB for Kilns 1-3, and H5-GB for Kiln 4 in-line kiln/ raw mill.in a manner consistent with good air pollution control practice for minimizing PM and PM_{10} emissions.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306.A.2, A.A.C. R18-2-331.A.3.e & A.A.C. R18-2-331.B]
[Material Permit Conditions are indicated with underline and italics]

b. *At all times including periods of startup, shutdown, and malfunction, the Permittee shall, maintain and operate Dust Collectors H2-1-DC when Clinker Cooler 1 is in operation, H2-2-DC when Clinker Cooler 2 is in operation, H2-3-DC when Clinker Cooler 3 is in operation, and H2-GB*

when Clinker Cooler 4 is in operation in a manner consistent with good air pollution control practice for minimizing PM and PM_{10} emissions. This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306.A.2, A.A.C. R18-2-331.A.3.e & A.A.C. R18-2-331.B]
[Material Permit Conditions are indicated with underline and italics]

3. Monitoring Requirements

a. Particulate Matter

(1) *The Permittee shall install,* operate, *calibrate,* and maintain *PM CPMS on the Kiln 1-3 stack, Kiln 4 in-line kiln/ raw mill stack, and Clinker Coolers 1, 2, 3 and 4 stacks to demonstrate continuous compliance with the established operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit.*

[40 CFR 63.1349(b)(1)(i), 40 CFR 63.1350(b)(1)(i), A.A.C. R18-2-331.A.3.c]
[Material permit conditions are indicated by underline and italics]

(a) The PM CPMS shall provide a 4-20 milliamp output or digital signal output and the establishment of its relationship to the manual reference method measurements shall be determined in units of milliamps or the monitors digital equivalent.

[40 CFR 63.1349(b)(1)(i)(A)]

(b) The PM CPMS operating range shall be capable of reading PM concentrations from zero to a level equivalent to three times the Permittee's allowable emission limit. If the PM CPMS is an auto-ranging instrument capable of multiple scales, the primary range of the instrument shall be capable of reading PM concentration from zero to a level equivalent to three times the Permittee's allowable emission limit.

[40 CFR 63.1349(b)(1)(i)(A)]

(c) During the initial or subsequent performance tests to demonstrate compliance with the PM limits, the Permittee shall record and average all milliamp or digital output values from the PM CPMS for the periods corresponding to the compliance test runs (e.g., average all the PM CPMS output values for three corresponding 2-hour Method 5 or Method 5I test runs).

[40 CFR 63.1349(b)(1)(i)(A)]

(2) To determine continuous compliance, the Permittee shall use the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. The Permittee

shall demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps or the digital equivalent) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day. The Permittee shall use equation 7 in 40 CFR 1349(b)(1)(v) to calculate 30 kiln operating day average.

[40 CFR 63.1349(b)(1)(v), 40 CFR 63.1350(b)(1)(ii)]

(3) For any exceedance of the 30 process operating day PM CPMS average value from the established operating parameter limit, the Permittee shall:

[40 CFR 63.1350(b)(1)(iii)]

(a) Within 48 hours of the exceedance, visually inspect the affected pollution control device (APCD);

[40 CFR 63.1350(b)(1)(iii)(A)]

(b) If inspection of the APCD identifies the cause of the exceedance, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and

[40 CFR 63.1350(b)(1)(iii)(B)]

(c) Within 30 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the PM CPMS operating limit within 45 days. The Permittee are not required to conduct additional testing for any exceedances that occur between the time of the original exceedance and the PM emissions compliance test required under this paragraph.

[40 CFR 63.1350(b)(1)(iii)(C)]

(4) PM CPMS exceedances leading to more than four required performance tests in a 12-month process operating period (rolling monthly) constitute a presumptive violation of 40 CFR 63 Subpart LLL.

[40 CFR 63.1350(b)(1)(iv)]

b. Opacity Monitoring Requirements

To demonstrate continuous compliance with the opacity standards in Conditions VI.B.1.a for kilns and VI.B.1.b for clinker coolers,

(1) The Permittee shall conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method

22 of Appendix A–7 to 40 CFR 60. The performance test must be conducted while the affected source is in operation.

[A.A.C. R18-2-306.A.3.c]

(2) If no visible emissions are observed in six consecutive monthly tests for any affected source, the Permittee may decrease the frequency of performance testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, the Permittee shall resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

[A.A.C. R18-2-306.A.3.c]

(3) If no visible emissions are observed during the semi-annual test for any affected source, the Permittee may decrease the frequency of performance testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual performance test, the Permittee shall resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

[A.A.C. R18-2-306.A.3.c]

(4) If visible emissions are observed during any Method 22 performance test, the Permittee shall conduct 30 minutes of opacity observations, recorded at 15-second interval in accordance with Method 9 of Appendix A–4 to 40 CFR 60. The Method 9 performance test shall begin within 1 hour of any observation of visible emissions.

[A.A.C. R18-2-306.A.3.c]

4. Performance Test Requirements

a. Particulate Matter

(1) The Permittee shall demonstrate initial compliance with the PM emissions standards in Conditions VI.B.1.a(1) and VI.B.1.b(1) by conducting a performance test on the Kiln 1-3 stack, Kiln 4 in-line kiln/ raw mill stack, and Clinker Coolers stacks using EPA Reference Method 5 or Method 5I at Appendix A-3 to 40 CFR Part 63.

[40 CFR 63.1348(a)(1), 40 CFR 63.1349(b)(1)]

(2) For Kiln 4 in-line kiln/ raw mill, the Permittee shall demonstrate initial compliance by conducting separate performance tests while the raw mill is under normal operating conditions and while the raw mill is not operating and calculate the time weighted average emissions. The operating limit will then be determined using Condition VI.B.4.a(3) below.

[40 CFR 63.1349(b)(1)(ix)]

(3) During the initial or subsequent performance tests, the Permittee shall establish the operating limit for the PM CPMS for each stack in accordance with following procedures.

[40 CFR 63.1349(b)(1)(ii)]

(a) If the average of the three EPA Reference Method 5 or 5I compliance test runs is below 75 percent of the PM emission limit, the Permittee shall calculate an operating limit by establishing a relationship of PM CPMS signal to PM concentration using the PM CPMS instrument zero, the average PM CPMS values corresponding to the three compliance test runs, and the average PM concentration from the EPA Reference Method 5 or 5Icompliance test with the procedures in 40 CFR 63.1349(b)(1)(iii)(A) through (D).

[40 CFR 63.1349(b)(1)(iii)]

(b) If the average of the three PM compliance test runs is at or above 75 percent of the PM emission limit, The Permittee shall determine the operating limit by averaging the PM CPMS milliamp output corresponding to the three PM performance test runs that demonstrate compliance with the emission limit using Equation 6 in 40 CFR 63.1349(b)(1)(iv).

[40 CFR 63.1349(b)(1)(iv)]

(4) The Permittee shall repeat the performance tests at least annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test. The Permittee shall also repeat the test if there is a change the analytical range of the instrument, or if the instrument or any principle analytical component of the instrument, that would alter the relationship of output signal to in-stack PM concentration, is replaced.

[40 CFR 63.1350(b)(1)(i), 40 CFR 63.1349(b)(1)(i)]

(5) For each performance test, the Permittee shall conduct at least three separate test runs under the conditions that exist when the affected source is operating at the level reasonably expected to occur. For each test run, the Permittee shall collect a minimum sample volume of 2 dscm for determining compliance with a new source limit and 1 dscm for determining compliance with an existing source limit. The Permittee shall calculate the time weighted average of the results from three consecutive runs. The Permittee need not determine the particulate matter collected in the impingers "back half" of the Method 5 or Method 5I particulate sampling train to demonstrate compliance with the PM standards of this subpart. This shall not preclude the permitting authority from requiring a determination of the "back half" for

other purposes. For kilns with inline raw mills, testing must be conducted while the raw mill is on and while the raw mill is off. If the exhaust streams of a kiln with an inline raw mill and a clinker cooler are comingled, then the comingled exhaust stream must be tested with the raw mill on and the raw mill off.

[40 CFR 63.1349(b)(1)(vi)]

(6) For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report shall also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (e.g. beta attenuation), span of the instruments primary analytical range, milliamp value or digital equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp or digital equivalent signals corresponding to each PM compliance test run.

[40 CFR 63.1349(b)(1)(vii)]

(7) The Permittee shall conduct performance tests annually for dust collectors H5-5-GB and H5-GB to determine compliance with the PM_{10} emission limit in Condition VI.B.1.a(4) of this Attachment in accordance with EPA Reference Method 5 or Method 201A.

[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition VI.D]

5. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with 40 A.A.C R18-2-705.B, A.A.C R18-2-705.C, 40 CFR 60.62(a)(1)(i) and (ii), 60.62(a)(2), 63.1343(b)(1), 63.1348(a)(1), 63.1349(b)(1), 63.1350(b)(1), 63.1350(n) and Consent Decree 4:10-CV-00573-DCB

[A.A.C. R18-2-325]

C. Dioxins and Furan Requirements

1. Emission Standards

The Permittee shall not cause to be discharged into the atmosphere from any kiln any gases which contain dioxins and furans (D/F) in excess of 0.2 ng/dscm TEQ*, measured on dry basis and corrected to 7% oxygen. If the average temperature at the inlet to the first particulate matter control device during the D/F performance test is 400 °F or less, the D/F emissions limit shall not exceed 0.4 ng/dscm (TEQ).

[40 CFR 63.1343(a), 40 CFR 63.1343(b)(1)]

*TEQ means the international method of expressing toxicity equivalents for dioxins and furans as defined in U.S. EPA, Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxins and -dibenzofurans (CDDs and CDFs) and 1989 Update, March 1989.

2. Operating Limitations

a. The Permittee shall operate Kilns 1-3 such that the temperature of the gas at the inlet to the PM control device (PMCD), does not exceed the applicable temperature limit determined in accordance with Condition VI.C.4.a(4) of this Attachment and established during the performance test.

[40 CFR 63.1346(a), 63.1346(b)]

b. The Permittee shall operate Kiln 4 in-line kiln/ raw mill such that:

(1) When In-Line Raw Mill is operating, the flue temperature at the inlet to the PMCD shall not exceed the applicable exhaust temperature limit determined in accordance with Condition VI.C.4.a(4) of this Attachment and established during the performance test when the raw mill was operating, except during periods of startup/shutdown when the temperature limit may be exceeded by no more than 10 percent

[40 CFR 63.1346(a)(1)]

(2) When In-Line Raw Mill is not operating, the flue temperature at the inlet to PMCD shall not exceed the applicable exhaust temperature limit determined in accordance with Condition VI.C.4.a(4) of this Attachment and established during the performance test when the raw mill was not operating, except during periods of startup/shutdown when the temperature limit may be exceeded by no more than 10 percent.

[40 CFR 63.1346(a)(2)]

c. If the Permittee employs sorbent injection as an emission control technique for D/F control, the Permittee shall operate the sorbent injection system in accordance with the following Conditions:

[40 CFR 63.1346(c)]

(1) The rolling three-hour rolling average activated sorbent injection rate must be equal to or greater than the sorbent injection rate determined in accordance with Condition VI.C.4.b(1) of this Attachment.

[40 CFR 63.1346(c)(1)]

(2) The Permittee shall:

(a) Either maintain the minimum activated carbon injection carrier gas flow rate, as a rolling three-hour rolling average, based on the manufacturer's specifications. These specifications shall be documented in the test plan developed in accordance with 40 CFR 63.7(c),

[40 CFR 63.1346(c)(2)(i)]

(b) Or, maintain the minimum activated carbon injection carrier gas pressure drop, as a rolling three-hour rolling average, based on the manufacturer's specifications.

These specifications shall be documented in the test plan developed in accordance with 40 CFR 63.7(c).
[40 CFR 63.1346(c)(2)(i)]

d. Except as provided in Condition VI.C.2.e below, the Permittee shall specify and use the brand and type of sorbent used during the performance test until a subsequent performance test is conducted, unless the site-specific performance test plan contains documentation of key parameters that affect adsorption and the Permittee establishes limits based on those parameters, and the limits on these parameters are maintained.
[40 CFR 63.1346(d)]

e. The Permittee may substitute, at any time, a different brand or type of sorbent provided that the replacement has equivalent or improved properties compared to the sorbent specified in the site-specific performance test plan and used in the performance test. The Permittee shall maintain documentation that the substitute sorbent will provide the same or better level of control as the original sorbent.
[40 CFR 63.1346(e)]

3. Monitoring Requirements

a. Temperature Monitoring Requirements

(1) *The Permittee shall calibrate, maintain, and operate a continuous monitoring system (CMS) to record the temperatures of the exhaust gases from Kilns 1-3, and Kiln 4 in-line kiln/ raw mill at the inlet to, or upstream of, PM control devices.*
[40 CFR 63.1350(g)(1) and A.A.C. R18-2-331.A.3.c]
[Material Permit Conditions are indicated with underline and italics]

(a) The temperature recorder response range shall include zero and 1.5 times the average temperature established according to the requirements in Condition VI.C.4.a(4) of this Attachment.
[40 CFR 63.1350(g)(1)(i)]

(b) The calibration reference for the temperature measurement shall be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or alternate reference, subject to approval by the EPA Administrator.
[40 CFR 63.1350(g)(1)(ii)]

(c) The calibration of all thermocouples and other temperature sensors shall be verified at least once every three months.
[40 CFR 63.1350(g)(1)(iii)]

(2) The Permittee shall monitor and continuously record the temperature of the exhaust gases from the Kilns 1-3 or Kiln 4 in-line kiln/ raw mill at the inlet to the PMCDs.

[40 CFR 63.1350(g)(2)]

(3) The required minimum data collection frequency shall be one minute.

[40 CFR 63.1350(g)(3)]

(4) Every hour, the Permittee shall record the calculated rolling three-hour average temperature using the average of 180 successive one-minute average temperatures.

[40 CFR 63.1350(g)(4)]

(5) When the operating status of the raw mill of the in-line kiln/raw mill is changed from off to on or from on to off, the calculation of the three-hour rolling average temperature shall begin anew, without considering previous recordings.

[40 CFR 63.1350(g)(5)]

b. Additional Monitoring Requirements When Using Sorbent Injection for D/F Control

(1) Monitoring of Activated Carbon Injection Rate

The Permittee shall install, calibrate, operate and maintain *a continuous monitor to record the rate of activated carbon injection in accordance with the requirements below). The accuracy of the rate measurement device must be ±1 percent of the rate being measured.*

[40 CFR 63.1350(h)(1) and A.A.C. R18-2-331.A.3.c]
[Material Permit Conditions are indicated with underline and italics]

(a) The Permittee shall locate the device in a position(s) that provides a representative measurement of the total sorbent injection rate.

[40 CFR 63.1350(m)(9)(i)]

(b) The Permittee shall install and calibrate the device in accordance with manufacturer's procedures and specifications.

[40 CFR 63.1350(m)(9)(ii)]

(c) The Permittee shall, at least annually, calibrate the device in accordance with the manufacturer's procedures and specifications.

[40 CFR 63.1350(m)(9)(iii)]

(d) The Permittee shall verify the calibration of the device at least once every three months.

[40 CFR 63.1350(h)(1)(i)]

(e) Each hour, the Permittee shall calculate the three-hour rolling average activated carbon injection rate for the previous three hours of process operation.
[40 CFR 63.1350(h)(1)(ii)]

(f) When the operating status of the raw mill of the in-line kiln/raw mill is changed from off to on or from on to off, the calculation of the three-hour rolling average activated carbon injection rate shall begin anew, without considering previous recordings.
[40 CFR 63.1350(h)(1)(iii)]

(2) Monitoring of Carrier Gas Parameter

(a) *The Permittee shall install, calibrate,* operate and maintain *a continuous monitor to record the activated carbon injection system carrier gas parameter (either the carrier gas flow rate or the carrier gas pressure drop) established during the D/F performance test in accordance with Condition VI.C.4.a of this Attachment.*
[40 CFR 63.1350(h)(2)(i) & A.A.C. R18-2-331.A.3.c]
[Material Permit Conditions are indicated with underline and italics]

(b) If the carrier gas flow rate is used, the Permittee shall determine, record, and maintain a record of the accuracy of the carrier gas flow rate monitoring system according to the procedures in appendix A to 40 CFR 75.
[40 CFR 63.1349(b)(3)(v)(C)]

(c) If the carrier gas pressure drop is used, determine, record, and maintain a record of the accuracy of the carrier gas pressure drop monitoring system according to the following procedures. The Permittee shall:
[40 CFR 63.1349(b)(3)(v)(C)]

(i) Locate the pressure sensor(s) in a position that provides a representative measurement of the pressure.
[40 CFR 63.1350(m)(6)(i)]

(ii) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.
[40 CFR 63.1350(m)(6)(ii)]

(iii) Use a gauge with a minimum tolerance of 1.27 centimeters of water or a transducer with a minimum tolerance of 1 percent of the pressure range.
[40 CFR 63.1350(m)(6)(iii)]

(iv) Check pressure tap pluggage daily.

[40 CFR 63.1350(m)(6)(iv)]

(v) Using a manometer, check gauge calibration quarterly and transducer calibration monthly.
[40 CFR 63.1350(m)(6)(v)]

(vi) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range or install a new pressure sensor.
[40 CFR 63.1350(m)(6)(vi)]

(d) The Permittee shall calculate each hour the 3-hour rolling average of the selected parameter value for the previous 3 hours of process operation using all of the one-minute data available (i.e., the CMS is not out-of-control.)
[40 CFR 63.1350(h)(2)(ii)]

4. Performance Test Requirements

a. The Permittee shall conduct performance tests on the kilns using Method 23 of Appendix A-7 to 40 CFR 60. For Kiln 4 in-line kiln/ raw mill, the Permittee shall conduct a performance test when the raw mill of the in-line kiln/raw mill is operating or not operating.
[40 CFR 63.1349(b)(3)]

(1) Each performance test shall consist of three separate runs conducted under representative conditions. The duration of each run shall be at least 3 hours, and the sample volume for each run must be at least 2.5 dscm (90 dscf).
[40 CFR 63.1349(b)(3)(i)]

(2) The temperature at the inlet to the kiln or in-line kiln/raw mill PMCD shall be continuously recorded during the period of the Method 23 test, and the continuous temperature record(s) shall be included in the performance test report.
[40 CFR 63.1349(b)(3)(ii)]

(3) Average temperatures shall be calculated for each run of the performance test.
[40 CFR 63.1349(b)(3)(iii)]

(4) The run average temperature shall be calculated for each run, and the average of the run average temperatures shall be determined and included in the performance test report and shall determine the applicable temperature limits in Conditions VI.C.2.a and VI.C.2.b of this Attachment.
[40 CFR 63.1349(b)(3)(iv)]

b. Additional Requirements for Sorbent Injection

(1) If sorbent injection is used for D/F control, the Permittee shall record the rate of sorbent injection to the kiln exhaust continuously during the period of the Method 23 test in accordance with Conditions VI.C.3.b(1)(a) through VI.C.3.b(1)(c) above, and include the continuous injection rate record(s) in the performance test report. The Permittee shall calculate the run average sorbent injection rate for each run. The Permittee shall determine the applicable injection rate limit by calculating the average of the three run average injection rates. The Permittee shall include the run average sorbent injection rate for each run, and the average of 3 test runs in the performance test report.

[40 CFR 63.1349(b)(3)(v)(A), 40 CFR 63.1349(b)(3)(vi), and 40 CFR 63.1350(m)(9)]

(2) The Permittee shall include the brand and type of sorbent used during the performance test in the performance test report.

[40 CFR 63.1349(b)(3)(v)(B)]

(3) The Permittee shall maintain a continuous record of the carrier gas parameter (flow rate or pressure drop) for the duration of the performance test. The Permittee shall develop the carrier gas parameter during the initial performance test and update during any subsequent performance test.

[40 CFR 63.1349(b)(3)(v)(C) and 40 CFR 63.1350(m)(6)]

c. The Permittee shall repeat the performance test between ~~29~~ 24 and 31 calendar months after the previous performance test.

[40 CFR 63.1349(c)]

5. Compliance Requirements

a. The Permittee shall demonstrate initial compliance with the D/F emissions standards by using the performance test methods and procedures in Condition VI.C.4.a of this Attachment. The Permittee shall determine the D/F TEQ concentration for each run and calculate the arithmetic average of the TEQ concentrations measured for the three runs to determine continuous compliance.

[40 CFR 63.1348(a)(3)(i)]

b. For Kiln 4, the Permittee shall demonstrate initial compliance with the D/F emissions standards by using the performance test methods and procedures in Condition VI.C.4.a of this Attachment, and by conducting separate performance tests while the raw mill is operating and the raw mill is not operating.

[40 CFR 63.1348(a)(3)(i)]

c. The Permittee shall demonstrate continuous compliance with the temperature operating limits specified in Conditions VI.C.2.a and VI.C.2.b by using the performance test methods and procedures in Conditions VI.C.4.a(2) through VI.C.4.a(4) of this Attachment. The Permittee shall

use the arithmetic average of the temperatures measured during the three runs to determine the applicable temperature limit.

[40 CFR 63.1348(a)(3)(ii)]

d. If activated carbon injection is used, the Permittee shall demonstrate compliance with the activated carbon injection rate operating limits specified in Condition VI.C.2.c by using the performance test methods and procedures in Condition VI.C.4.b(1) of this Attachment.

[40 CFR 63.1348(a)(3)(iii)]

e. If activated carbon injection is used, the Permittee shall also develop a carrier gas parameter (either the carrier gas flow rate or the carrier gas pressure drop) during the initial performance test and updated during any subsequent performance test conducted under Condition VI.C.4.a that meets the requirements of Condition VI.C.4.b(3). The Permittee shall demonstrate compliance with the carrier gas parameter (either the carrier gas flow rate or the carrier gas pressure drop) by maintaining it within ± 5 percent of the value established during the performance test.

[40 CFR 63.1348(a)(3)(iv)]

6. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with 440 CFR 63.1343(a), (a)(1) & (a)(2), 63.1343(b)(1), 63.1346(b) 63.1346(c)(1) & (2), 63.1346(d), 63.1346(e), 63.1348(a)(3), 63.1349(b)(3) & (8), 63.1350(g), 63.1350(h)(1), 63.1350(h)(2), and 63.1350(m)(6) & (9).

[A.A.C. R18-2-325]

D. THC Requirements

1. Emission Standards

The Permittee shall not cause to be discharged into the atmosphere from Kiln 1-3 stack, and Kiln 4 in-line kiln/ raw mill stack any gases which contain THC more than 24 ppmvd, measured as propane. THC emission limit is on dry basis, corrected to 7% oxygen, and based on rolling 30-day average. The Permittee may elect to meet an alternative limit of 12 ppmvd for total organic HAP.

[40 CFR 63.1343(a), 40 CFR 63.1343(b)(1)]

Total organic HAP means the sum of the concentrations of compounds of formaldehyde, benzene, toluene, styrene, m-xylene, p-xylene, o-xylene, acetaldehyde, and naphthalene as measured by EPA Test Method 320 or Method 18 of appendix A to 40 CFR 63 or ASTM D6348-03 or a combination of these methods, as appropriate. If measurement results for any pollutant are reported as below the method detection level (e.g., laboratory analytical results for one or more sample components are below the method defined analytical detection level), the Permittee must use the method detection level as the measured emissions level for that pollutant in calculating the total organic HAP value. The measured result for a multiple component analysis (e.g., analytical values for multiple Method 18

fractions) may include a combination of method detection level data and analytical data reported above the method detection level.

2. Monitoring Requirements

a. *The Permittee shall, install,* operate, and maintain *THC continuous emission monitoring systems (CEMS) on the following stacks in accordance with Performance Specification 8 or Performance Specification 8A of Appendix B to 40 CFR Part 60. The CEMS shall comply with all of the requirements for continuous monitoring systems in 40 CFR 63 Subpart A. The Permittee shall operate and maintain each CEMS according to the quality assurance requirements in Procedure 1 of Appendix F in 40 CFR Part 60.* For THC continuous emission monitoring systems certified under Performance Specification 8A, the Permittee shall conduct the relative accuracy test audits required under Procedure 1 in accordance with Performance Specification 8, Sections 8 and 11 using Method 25A in appendix A to 40 CFR part 60 as the reference method; the relative accuracy must meet the criteria of Performance Specification 8, Section 13.2.

[40 CFR 63.1350(i)(1) and A.A.C. R18-2-331.A.3.c]
[Material Permit Conditions are indicated with underline and italics]

(1) Kilns 1-3 stack H5-5-GB

(2) Kiln 4 in-line kiln/ raw mill Stack H5-GB

b. For the purposes of conducting the accuracy and quality assurance evaluations for CEMS, the THC span value (as propane) is 50 ppmvd and the reference method (RM) is Method 25A of Appendix A to 40 CFR Part 60.

[40 CFR 63.1349(b)(4)(i)]

c. The THC CEMS measurement scale shall be capable of reading THC concentrations from zero to a level equivalent to two times the highest THC emissions average determined during the performance test, including mill on or mill off operation.

[40 CFR 63.1349(b)(7)(vi)]

d. If complying with the total organic HAP emissions limits, the Permittee shall continuously monitor THC according to Condition VI.D.2.a or in accordance with Performance Specification 8 or Performance Specification 8A of appendix B to part 60 of this chapter and comply with all of the requirements for continuous monitoring systems found in the general provisions, subpart A of this part. The Permittee shall operate and maintain each CEMS according to the quality assurance requirements in Procedure 1 of appendix F in part 60 of this chapter. The Permittee shall develop an emissions monitoring plan in accordance with Condition II.B.6 above.

[40 CFR 63.1350(j)]

3. Performance Test Requirements

a. THC

(1) The Permittee shall use the THC CEMS in Condition VI.D.2.a of this Attachment for initial performance test. The Permittee shall use the average THC concentration obtained during the first 30 kiln operating days of kiln operation after the compliance date of September 9, 2015.

[40 CFR 63.1349(b)(4)(ii)]

(2) For Kiln 4, the Permittee shall conduct separate performance tests while the raw mill is operating ("mill on") and while the raw mill is not operating ("mill off"). Using the fraction of time the raw mill is on and the fraction of time that the raw mill is off, the Permittee shall calculate this limit as a weighted average of the THC levels measured during raw mill on and raw mill off compliance testing with the following equation:

[40 CFR 63.1349(b)(7)(x)]

$$RR = (yy * tt) + (xx * (1 - tt))$$

Where:

R = Operating limit as THC, ppmvw.

y = Average THC CEMS value during mill on operations, ppmvw.

t = Percentage of operating time with mill on.

x = Average THC CEMS value during mill off operations, ppmvw.

(1- t) = Percentage of operating time with mill off.

b. Total Organic HAPs

If the Permittee chooses to comply with total HAPs emission limit in lieu of the THC emission limit, the Permittee shall demonstrate compliance by conducting a performance test to determine total organic HAP emissions by following the procedures.

[40 CFR 63.1349(b)(4)(v) and 63.1349(b)(7)]

(1) The Permittee shall use Method 320 of Appendix A to 40 CFR Part 63, Method 18 of Appendix A of 40 CFR Part 60, ASTM D6348–03 or a combination to determine emissions of total organic HAP. Each performance test shall consist of three separate runs under the conditions that exist when the affected source is operating at the level reasonably expected to occur. For the Kiln 4 in-line kiln/raw mill the Permittee shall conduct three separate test

runs with the raw mill on, and three separate runs under the conditions that exist when the affected source is operating at the level reasonably expected to occur with the mill off. Each run shall be conducted for at least 1 hour. The Permittee shall conduct each Method 18 test run to collect a minimum target sample equivalent to three times the method detection limit. The Permittee shall calculate the average of the results from three runs to determine compliance.

[40 CFR 63.1349(b)(7)(i) and (xii)]

(2) At the same time of conducting the performance test for total organic HAP, The Permittee shall also determine a site-specific THC emissions limit by operating a THC CEMS in accordance with the requirements of Condition VI.D.2.d. The duration of the performance test shall be at least 3 hours and the average THC concentration (as calculated from the recorder output) during the 3-hour test shall be calculated. The Permittee shall establish the THC operating limit and determine compliance with it according to Condition VI.D.3.b(3). The Permittee may extend the testing time of the organic HAP performance test, if required, to adequately capture HAP and/or THC variability over time.

[40 CFR 63.1349(b)(7)(ii)]

(3) The Permittee shall determine the operating limit in accordance with the procedures in 40 CFR 63.1349(b)(7)(viii) and (ix). If the organic HAP performance test demonstrates that the average organic HAP emission levels are below 75 percent of the emission limit (9 ppmv) the Permittee shall will use the average THC value recorded during the organic HAP performance test, and the average total organic HAP result of the performance test to establish the operating limit. If the organic HAP compliance test results demonstrate that the average organic HAP emission levels are at or above 75 percent of the emission limit, the operating limit is established as the average THC value recorded during the organic HAP performance test. The Permittee must establish a new operating limit after each performance test. The Permittee shall repeat the performance test no later than 30 months following the last performance test and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.

[40 CFR 63.1349(b)(7)(vii)]

(4) If the organic HAP emissions are below 75 percent of the organic HAP standard and the Permittee determines the operating limit with Condition VI.D.3.b(3) above, the THC CEMS must be calibrated and operated on a measurement scale no greater than 180 ppmvw, as carbon, or 60 ppmvw as propane.

[40 CFR 63.1349(b)(7)(viii)]

c. If the THC level exceeds by 10 percent or more the site-specific THC emissions limit, the Permittee shall

[40 CFR 63.1349(b)(7)(xiii)]

(1) As soon as possible but no later than 30 days after the exceedance, conduct an inspection and take corrective action to return the THC CEMS measurements to within the established value; and

[40 CFR 63.1349(b)(7)(xiii)(A)]

(2) Within 90 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct another performance test to determine compliance with the organic HAP limit and to verify or re-establish the site-specific THC emissions limit.

[40 CFR 63.1349(b)(7)(xiii)(B)]

d. If the Permittee chooses to comply with organic HAPs emission limit, The Permittee shall repeat the performance test between 29 and 31 calendar months after the previous performance test.

[40 CFR 63.1349(c)]

4. Compliance Requirements

a. THC

(1) The Permittee shall use the THC CEMS in Condition VI.D.2.a of this Attachment to demonstrate initial compliance with THC emission standard. The Permittee shall use the average THC concentration obtained during the first 30 kiln operating days of kiln operation after the compliance date of September 9, 2015.

[40 CFR 63.1348(a)(4)(i) and 40 CFR 63.1349(b)(4)(ii)]

(2) To determine continuous compliance with the THC operating limit, the Permittee shall record the THC CEMS output data for all periods when the process is operating and the THC CEMS is not out-of-control. The Permittee shall demonstrate continuous compliance by using all quality-assured hourly average data collected by the THC CEMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (ppmvw) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day. The Permittee shall use Equation 16 to determine the 30-kiln operating day average.

[40 CFR 63.1348(b)(6), 63.1349(b)(7)(xi)]

$$30-\text{Kiln operating day average} = \frac{\sum_{pp=1}^{nn} HH_{pppppp}}{nn}$$

Where:

H_{pvi} = The hourly parameter value for hour i, ppmvw.

n = The number of valid hourly parameter values collected over 30-kiln operating days.

b. HAP

(1) If the Permittee elects to demonstrate compliance with the total organic HAP emissions limit in lieu of the THC emissions limit, the Permittee shall demonstrate compliance with the total organic HAP emissions standards by using the performance test methods and procedures in Condition VI.D.3.b(1) of this Attachment.

[40 CFR 63.1348(a)(4)(ii)]

(2) To demonstrate initial compliance for Kiln 4, the Permittee shall conduct the separate performance tests as specified in Condition VI.D.3.b(1) of this Attachment while the raw mill kiln is operating and while the raw mill of the kiln is not operating. The time weighted average total organic HAP concentration measured during the separate initial performance test shall be used to determine initial compliance.

[40 CFR 63.1348(a)(4)(iii) and 63.1348(a)(4)(iv)]

(3) The time weighted average THC concentration measured during the initial performance test in Condition VI.D.3.a of this Attachment shall be used to determine the site-specific THC limit. Using the fraction of time the inline kiln/raw mill is on and the fraction of time that the inline kiln/raw mill is off, the Permittee shall calculate this limit as a time weighted average of the THC levels measured during raw mill on and raw mill off testing using one of the two approaches in 40 CFR 63.1349(b)(7)(viii) or (ix) as described in Condition VI.D.3.b(3) of this Attachment depending on the level of organic HAP measured during the compliance test.

[40 CFR 63.1348(a)(4)(v)]

(4) The Permittee shall demonstrate continuous compliance using the monitoring methods and procedures in Condition VI.D.2.d of this Attachment.

[40 CFR 63.1348(b)(6)]

5. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with 40 40 CFR 63.1343(a), 63.1343(b)(1) & (6), 63.1348(a)(4), 63.1348(b)(6), 63.1349(b)(4) & (7), and 63.1350(i) & (j),

[A.A.C. R18-2-325]

E. Mercury Requirements

1. The Compliance date for the mercury requirements under this Part shall be September 9, 2016.

2. Emission Standards

   a. The Permittee shall not cause to be discharged into the atmosphere from any kiln any gases which contain mercury more than 55 pounds/MM Tons of clinker, based on rolling 30-day average.

   [40 CFR 63.1343(a), 40 CFR 63.1343(b)(1)]

   b. No kiln shall use as a raw material or fuel any fly ash where the mercury content of the fly ash has been increased through the use of activated carbon, or any other sorbent, unless the facility can demonstrate that the use of that fly ash will not result in an increase in mercury emissions over baseline emissions (i.e., emissions not using the fly ash). The Permittee has the burden of proving there has been no emissions increase over baseline. Once the kiln is in compliance with mercury emission limit specified in Condition VI.E.2.a, this condition shall no longer be applicable.

   [40 CFR 63.1346(f)]

3. Monitoring Requirements

   The Permittee shall install, calibrate, operate and maintain *a mercury continuous emissions monitoring system (Hg CEMS) on the kiln stacks in accordance with Performance Specification 12A of Appendix B to 40 CFR Part 60 or an integrated sorbent trap monitoring system in accordance with Performance Specification 12B (PS 12B) of appendix B to 40 CFR Part 60.*

   [40 CFR 63.1350(k), A.A.C. R18-2-331.A.3.c]
   [Material Permit Conditions are indicated with underline and italics]

   The Permittee shall monitor mercury continuously according to Conditions VI.E.3.a through VI.E.3.e below.

   a. The Permittee shall use a span value for any Hg CEMS that represents the mercury concentration corresponding to approximately two times the emissions standard rounded up to the nearest multiple of 5 $\mu g/m^3$ of total mercury or higher level if necessary to include Hg concentrations which may occur (excluding concentrations during in-line raw "mill off" operation). As specified in PS 12A, Section 6.1.1, the data recorder output range shall include the full range of expected Hg concentration values which would include those expected during "mill off" conditions. Engineering judgments made and calculations used to determine the corresponding span concentration from the emission standard shall be documented in the site-specific monitoring plan and associated records.

   [40 CFR 63.1350(k)(1)]

   In order to quality assure data measured above the span value, the Permittee shall use one of the following three options. Where these options are employed while the kiln is operating in a mill-off mode, the "above

span" described in Condition VI.E.3.b(3) below may substitute for the daily upscale calibration provided the data normalization process in Condition VI.E.3.b(3) below are not required. If data normalization is required, the normal daily upscale calibration check must be performed to quality assure the operation of the CEMS for that day. In this particular case, adjustments to CEMS normally required by Procedure 5 when a daily upscale does not meet the 5 percent criterion are not required, unless Condition VI.E.3.b(3) data normalization is necessary and a subsequent normal daily calibration check demonstrates the need for such adjustment.

[40 CFR 63.1350(k)(2)]

(1) The Permittee shall include a second span that encompasses the Hg emission concentrations expected to be encountered during "mill off" conditions. This second span may be rounded to a multiple of 5 $\mu g/m^3$ of total mercury. The requirements of PS-12A, shall be followed for this second span with the exception that a RATA with the mill off is not required.

[40 CFR 63.1350(k)(2)(i)]

(2) The Permittee shall quality assure any data above the span value by proving instrument linearity beyond the span value established in Condition VI.E.3.a using the following procedure.

The Permittee shall conduct a weekly "above span linearity" calibration challenge of the monitoring system using a reference gas with a certified value greater than your highest expected hourly concentration or greater than 75 percent of the highest measured hourly concentration. The "above span" reference gas must meet the requirements of PS 12A, Section 7.1 and must be introduced to the measurement system at the probe. Record and report the results of this procedure as you would for a daily calibration. The "above span linearity" challenge is successful if the value measured by the Hg CEMS falls within 10 percent of the certified value of the reference gas. If the value measured by the Hg CEMS during the above span linearity challenge exceeds ±10 percent of the certified value of the reference gas, the monitoring system must be evaluated and repaired and a new "above span linearity" challenge met before returning the Hg CEMS to service, or data above span from the Hg CEMS must be subject to the quality assurance procedures established in Condition VI.E.3.a(3) below. In this manner values measured by the Hg CEMS during the above span linearity challenge exceeding ±20 percent of the certified value of the reference gas must be normalized using Equation 22.

[40 CFR 63.1350(k)(2)(ii)]

(3) The Permittee shall quality assure any data above the span value established in Condition VI.E.3.a using the following procedure.

Any time two consecutive one-hour average measured concentrations of Hg exceeds the span value you must, within 24 hours before or after, introduce a higher, "above span" Hg reference gas standard to the Hg CEMS. The "above span" reference gas must meet the requirements of PS 12A, Section 7.1, must target a concentration level between 50 and 150 percent of the highest expected hourly concentration measured during the period of measurements above span, and must be introduced at the probe. While this target represents a desired concentration range that is not always achievable in practice, it is expected that the intent to meet this range is demonstrated by the value of the reference gas. Expected values may include "above span" calibrations done before or after the above span measurement period. Record and report the results of this procedure as you would for a daily calibration. The "above span" calibration is successful if the value measured by the Hg CEMS is within 20 percent of the certified value of the reference gas. If the value measured by the Hg CEMS exceeds 20 percent of the certified value of the reference gas, then the Permittee must normalize the one-hour average stack gas values measured above the span during the 24-hour period preceding or following the "above span" calibration for reporting based on the Hg CEMS response to the reference gas as shown in the equation below:

Normalized stack gas result:

$$\frac{CCCCCCttCCCCCCCCCC\ \ CCCCCCCCCCCCnnrrCC\ \ gggggg\ \ vvggvvvvCC}{MMCCggggvvCCCCCC\ \ vvggvvvvCC\ \ ooCC\ \ CCCCCCCCCCCCnnrrCC\ \ gggggg} \times MMCCggggvvCCCCCC\ \ ggttggrrss\ \ gggggg\ \ CCCCggvvvvtt$$

[40 CFR 63.1350(k)(2)(iii)]

(4) Only one "above span" calibration is needed per 24 hour period. If the "above span" calibration is conducted during the period when measured emissions are above span and there is a failure to collect at least one valid data point in an hour due to the calibration duration, then the Permittee must determine the emissions average for that missed hour as the average of hourly averages for the hour preceding the missed hour and the hour following the missed hour. In an hour where an "above span" calibration is being conducted and one or more data points are collected, the emissions average is represented by the average of all valid data points collected in that hour.

b. The Permittee shall operate and maintain each Hg CEMS or an integrated sorbent trap monitoring system according to the quality assurance requirements in Procedure 5 of Appendix F to 40 CFR Part 60. During the RATA of integrated sorbent trap monitoring systems required under Procedure 5, the Permittee may apply the appropriate exception for sorbent trap section 2 breakthrough:

[40 CFR 63.1350(k)(3)]

(1) For stack Hg concentrations >1 µg/dscm, <10% of section 1 mass;

(2) For stack Hg concentrations <1 µg/dscm and >0.5 µg/dscm, <20% of section 1 mass;

(3) For stack Hg concentrations <0.5 µg/dscm and >0.1 µg/dscm, <50% of section 1 mass; and

(4) For stack Hg concentrations <0.1 µg/dscm, no breakthrough criterion assuming all other QA/QC specifications are met.

c. Relative accuracy testing of mercury monitoring systems under PS 12A, PS 12B, or Procedure 5 shall be conducted at normal operating conditions with the raw mill on

[40 CFR 63.1350(k)(4)]

d. *The Permittee shall install, calibrate,* operate, and maintain *instruments for continuously measuring and recording the each kiln exhaust gas flow rate to the atmosphere according to the requirements in Condition II.B.3 of this Attachment. The Permittee shall make appropriate moisture correction to the kiln exhaust gas flow rates.*

[40 CFR 63.1350(k)(5), 40 CFR 63.1343(a) and A.A.C. R18-2-331.A.3.c]
[Material Permit Conditions are indicated with underline and italics]

e. If the Permittee operates an integrated sorbent trap monitoring system conforming to PS 12B, the Permittee may use a monitoring period at least 24 hours but no longer than 168 hours in length. The Permittee shall use a monitoring period that is a multiple of 24 hours (except during relative accuracy testing as allowed in PS 12B).

[40 CFR 63.1350(k)(6)]

4. Compliance and Performance Test Requirements

a. Initial Compliance

(1) The Permittee shall demonstrate compliance by operating a mercury CEMS or a sorbent trap based CEMS. The Permittee shall demonstrate initial compliance with the mercury emissions standard based on the emissions rate for first 30 operating days the Permittee operate a mercury CEMS or sorbent trap monitoring system after the compliance date of September 9, 2016 using following equation.

[40 CFR 63.1348(a)(5), 40 CFR 63.1349(b)(5)]

$$EE_{30DD} = ss \frac{\sum_{CC=1}^{mm} CC_{CC}QQ_{CC}}{PP}$$

E30D = 30-day rolling emission rate of mercury, lb/MM tons clinker;

Ci = Concentration of mercury for operating hour i, µg/scm;

Qi = Volumetric flow rate of effluent gas for operating hour i, where Cs and Qs are on the same basis (either wet or dry), scm/hr;

K = Conversion factor, 1 lb/454,000,000 µg;

n = Number of kiln operating hours in the previous 30 kiln operating day period where both C and Qi qualified data are available.

P = Total runs from the previous 30 days of clinker production during the same time period as the mercury emissions measured, million tons

(2) If the Permittee uses an integrating sorbent trap CEMS, the Permittee shall assign the average Hg emissions concentration determined for an integrating period (e.g., 7 day sorbent trap monitoring system sample) to each relevant hour of the kiln operating days spanned by each integrated sample and calculate the 30 kiln operating day emissions rate value using the assigned hourly Hg emissions concentrations and the respective flow and production rate values collected during the 30 kiln operating day performance test period. Depending on the duration of each integrated sampling period, the Permittee may not be able to calculate the 30 kiln operating day emissions value until several days after the end of the 30 kiln operating day performance test period.

[40 CFR 63.1348(a)(5)(i)]

(3) For example, a sorbent trap monitoring system producing an integrated 7-day sample will provide Hg concentration data for each hour of the first 28 kiln operating days (i.e., four values spanning 7 days each) of a 30 operating day period. The Hg concentration values for the hours of the last 2 days of the 30 operating day period will not be available for calculating the emissions for the performance test period until at least five days after the end of the subject period.

[40 CFR 63.1348(a)(5)(ii)]

b. Continuous Compliance

(1) The Permittee shall demonstrate compliance using the monitoring methods and procedures in Condition VI.E.3 of this Attachment.

[40 CFR 63.1348(b)(7)(i)]

(2) If the Permittee uses an integrated sorbent trap Hg CEMS to determine ongoing compliance, the Permittee shall use the procedures described in Condition VI.E.4.a(2) of this Attachment to assign hourly mercury concentration values and to calculate

rolling 30 operating data emissions rates. Since the Permittee assigns the mercury concentration measured with the sorbent trap to each relevant hour respectively for each operating day of the integrated period, the Permittee may schedule the sorbent change periods to any time of the day (i.e., the sorbent trap replacement need not be scheduled at 12:00 midnight nor must the sorbent trap replacements occur only at integral 24-hour intervals).

[40 CFR 63.1348(b)(7)(i)]

(3) Mercury must be measured either upstream of the coal mill or in the coal mill stack.

[40 CFR 63.1348(b)(7)(ii)]

5. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with 40 CFR 63.1343(a), 63.1343(b)(1). 63.1346(f), 63.1348(a)(5), 1349(b)(5) & (7), and 63.1350(k),

[A.A.C. R18-2-325]

F. HCl Requirements

1. The Compliance date for the HCl requirements under this part shall be September 9, 2016.

2. Emission Standards

The Permittee shall not cause to be discharged into the atmosphere from any kiln any gases which contain HCl more than 3.0 ppmvd on dry basis, corrected to 7 percent oxygen. If the Permittee uses CEMS for compliance, the emission limit is based on rolling 30-day average.

[40 CFR 63.1343(a), 40 CFR 63.1343(b)(1)]

3. Operating Limitations

The Permittee may choose to install lime injection on the Kiln 4 Baghouse to assist in achieving compliance with the HCl emission limit set forth in Condition VI.F.2 of this attachment. The lime injection system may be used intermittently, if necessary, to achieve compliance with the HCl emission limit.

[A.A.C. R18-2-306.A.2]

4. Monitoring Requirements

The Permittee shall operate HCl CEMS on the kiln stacks in accordance to one of the following requirements:

a. *The Permittee shall install* operate, maintain, and *quality assure a HCl CEMS installed and certified under PS 15 according to the quality assurance requirements in Procedure 1 of Appendix F to 40 CFR Part 60 except that the Relative Accuracy Test Audit requirements of Procedure 1*

shall be replaced with the validation requirements and criteria of sections 11.1.1 and 12.0 of PS 15.

[40 CFR 63.1350(l)(1), A.A.C. R18-2-331.A.3.c]
[Material Permit Conditions are indicated with underline and italics]

b. *Alternatively, upon promulgation, the Permittee may install and operate the HCl CEMS in accordance with any other performance specification in Appendix B to 40 CFR Part 60. When promulgated, if the Permittee chooses to install and operate an HCl CEMS in accordance with PS 18 of appendix B to 40 CFR Part 60, the Permittee shall* operate, maintain and *quality assure the HCl CEMS using the associated Procedure 6 of appendix F to 40 CFR Part 60.*

[40 CFR 63.1350(l)(1), A.A.C. R18-2-331.A.3.c]
[Material Permit Conditions are indicated with underline and italics]

c. For any of the above performance specifications, the Permittee shall use Method 321 of Appendix A to 40 CFR Part 63 as the reference test method for conducting relative accuracy testing. Span value and calibration requirements specified in 40 CFR 63.1350(l)(i) and (ii) shall apply to these HCl CEMS.

[40 CFR 63.1350(l)(1)]

d. If the Permittee employs lime injection as an emission control technique for HCl control, the Permittee shall operate the lime injection system in accordance with the following conditions:

(1) The Permittee shall maintain records of the amount of lime injected.

(2) The Permittee shall maintain records of all major maintenance activities conducted on air pollution control equipment.

[A.A.C. R18-2-306.A.2]

5. Compliance and Performance Test Requirements

a. The Permittee shall demonstrate initial and continuous compliance by operating CEMS as per Condition VI.F.3

[40 CFR 63.1348(a)(6)(i) and 1348(b)(8)]

b. Initial compliance shall be based on the 30 kiln operating days that occur after September 9, 2016 in which the Permittee operates using a HCl CEMS. Hourly HCl concentration data shall be obtained according to Condition VI.F.3.

[40 CFR 63.1348(a)(6)(i), 63.1349(b)(6)(ii)]

c. Performance tests required every 30 months must be completed no more than 31 calendar months after the previous performance test except where that specific pollutant is monitored using CEMS; performance tests required every 12 months must be completed no more than 13 calendar months after the previous performance test.

[40 CFR 63.1349(c)]

6. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with 40 CFR 63.1343(a), 63.1343(b)(1), 1348(a)(6) & (b)(8), 63.1349(b)(6), and 63.1350(l)(1)

[A.A.C. R18-2-325]

G. Carbon Monoxide (CO) and Nitrogen Oxides (NO_X)

1. Emission Standards

a. *Total emissions of carbon monoxide from Kilns 1, 2, 3, and Kiln 4 in-line kiln/raw mill shall not exceed 5,069 tons per year (rolling twelve-month total calculated at the end of each month).*

[A.A.C. R18-2-306.01, A.A.C. R18-2-331.A.3.a]
[Material Permit Conditions are indicated with underline and italics]

b. *Total emissions of nitrogen oxides from Kilns 1, 2, 3, and Kiln 4 in-line kiln/raw mill shall not exceed 5,144 tons per year (rolling twelve-month total calculated at the end of each month).*

[A.A.C. R18-2-306.01, A.A.C. R18-2-331.A.3.a]
[Material Permit Conditions are indicated with underline and italics]

2. Monitoring Requirements

a. *The Permittee shall calibrate,* maintain and operate *continuous emission monitoring systems to measure carbon monoxide (CO) and nitrogen oxides (NO_X) mass emissions from Kilns 1,2,3, and Kiln 4 in-line kiln/raw mill.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R1-2-306.A.3.c, A.A.C. R18-2-331.A.3.c and R18-2-331.B]
[Material Permit Conditions are indicated with underline and italics]

b. The continuous emission rate monitoring systems shall meet the following requirements:

[A.A.C. R18-2-306(A)(3)(c), -312(H)(3), Permit 1000542 Condition VI]

(1) 40 CFR Part 60, Appendix B, "Performance Specifications."

(a) The NO_X continuous emission rate monitoring systems shall meet the requirements of Performance Specification 2, Specifications and test procedures for SO_2 and NO_X continuous emission monitoring systems in stationary sources, in Appendix B to 40 CFR Part 60.

(b) The CO continuous emission rate monitoring system shall meet the requirements of Performance Specification 4a, Specifications and test procedures for carbon monoxide

continuous emission monitoring systems in stationary sources, in Appendix B to 40 CFR Part 60.

(c) The NO_X and CO continuous emission rate monitoring systems shall meet the requirements of Performance Specification 6, Specifications and test procedures for continuous emission rate monitoring systems in stationary sources, in Appendix B to 40 CFR Part 60.

(2) 40 CFR Part 60, Appendix F, "Quality Assurance Procedures."

The Permittee shall continue to implement the ADEQ approved Quality Assurance/Quality Control Plan which includes procedures for dealing with data gaps based on the procedures contained in 40 CFR Part 75, Subpart D (40 CFR 75.30).

c. Instrument span shall be such that the expected output is 50 to 70 percent of span.

d. All data shall be retained on site in electronic form and shall be available for review by any authorized ADEQ representative.

e. The Permittee shall maintain a file of all measurements, including the continuous monitoring system and performance testing data; continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices. These data shall be recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurements, maintenance, reports and records.

f. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, the Permittee shall meet minimum frequency of operation requirements as follows: the continuous monitoring system shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

g. For continuous monitoring system measurements, one-hour arithmetic averages shall be computed from four or more data points equally spaced over each one-hour period. Data recorded during periods of continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this condition.

h. The Permittee shall calculate and record the total carbon monoxide and nitrogen oxides emissions from all kilns at the end of each month, for the preceding 12-month period. This record shall be retained for at least five years following the date of such measurements.

i. The following shall be considered periods of excess emissions:

(1) All 12-month periods for which the NO_X emission rate to the atmosphere as determined in accordance with Condition VI.G.2.h exceeds the applicable emission standard in Condition VI.G.1.b.

(2) All 12-month periods for which the CO emission rate to the atmosphere as determined in accordance with Condition VI.G.2.h exceeds the emission standard in Condition VI.G.1.a.

H. Sulfur Dioxide (SO_2)

1. Emission Standards

The Permittee shall not emit sulfur dioxide from kilns in an amount in excess of 6 pounds of sulfur oxides, calculated as sulfur dioxide, per ton cement kiln feed.

[A.A.C. R-18-2-705.D]

2. Performance Test Requirement

The Permittee shall conduct a performance test once during the permit term in accordance with EPA Reference Method 6C of 40 CFR Part 60, Appendix A, to measure the concentration of sulfur dioxide being emitted into the atmosphere from Kilns 1, 2, 3 and 4. Testing of Kilns 1, 2 and 3 shall be conducted within 90 days of startup. The tests shall be conducted while burning the fuel or fuel mix containing the highest possible sulfur content for the year.

[A.A.C. R18-2-312.A, A.A.C. R18-2-306.A.3.c]

I. Regional Haze Requirements

1. Applicability

This section applies to Kiln 4 for the reduction of NO_X emissions as required per the Regional Haze Rule.

[40 CFR 52.145(k)(1)]

2. Emissions limitations and Standards

The Permittee shall not emit or cause to be emitted from Kiln 4 NO_X in excess of 3.46 pounds of NO_X per ton of clinker produced, based on a rolling 30-kiln operating day basis.

[40 CFR 52.145(k)(3)(ii)]

3. Compliance Date

The Permittee shall comply with the requirements of Condition VI.I of this attachment no later than December 31, 2018.

[40 CFR 52.145(k)(5)(i)]

4. Compliance Determinations

a. Continuous Emission Monitoring System

(1) *The Permittee shall maintain, calibrate,* and operate *a CEMS, in full compliance with the requirements found at 40 CFR 60.63(f) and (g), to accurately measure concentration by volume of NO_X, diluent, and stack gas volumetric flow rate from Kiln 4 in-line kiln/raw mill stack (H5-GB).*

[A.A.C. R18-2-331.A.3.c and 40 CFR 52.145(k)(7)(i)(B)]
[Material Permit Conditions are indicated with underline and italics]

(2) The Permittee shall use CEMS to determine compliance with the emission limitation in Condition VI.I.2 of this attachment, in combination with data on actual clinker production.

[40 CFR 52.145(k)(7)(i)(B)]

(3) The Permittee must operate the monitoring system and collect data at all required intervals at all times Kiln 4 is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).

[40 CFR 52.145(k)(7)(i)(B)]

b. Methods

(1) The Permittee shall record the daily clinker production rates.

[40 CFR 52.145(k)(7)(ii)(A)]

(2) Compliance Calculations

(a) The Permittee shall calculate and record the 30-kiln operating day average emission rate of NO_X, in pounds per ton (lb/ton) of clinker produced, as the total of all hourly emissions data for the cement kiln in the preceding 30-kiln operating days, divided by the total tons of clinker produced in that kiln during the same 30-day operating period, using the following equation:

$$EE_{DD} = ss\left[\frac{1}{mm}\right]\frac{\sum_{CC-1}^{nn} CC\ QQ\ C\ C\ CC}{\sum_{CC=1}^{mm} PP_{CC}}$$

Where:

E_D = 30 kiln operating day average emission rate of NO_X, lb/ton of clinker;

C_i = Concentration of NO_X for hour i as recorded by the CEMS required by Condition VI.I.4.a of this attachment, ppm;

Q_i = Volumetric flow rate of effluent gas for hour i as recorded by the CEMS required by Condition VI.I.4.a of this attachment, where Ci and Qi are on the same basis (either wet or dry), scf/hr;

P_i = Total kiln clinker produced during production hour i, ton/hr;

k = Conversion factor, $1.194 \times 10{-}7$ for NO_X; and

n = Number of kiln operating hours over 30 kiln operating days, n = 1 up to 720.

[40 CFR 52.145(k)(7)(ii)(B)(1)]

(b) For each kiln operating hour for which the Permittee does not have at least one valid 15-minute CEMS data value, the Permittee must use the average emissions rate in pounds per hour (lb/hr) from the most recent previous hour for which valid data are available. Hourly clinker production shall be determined by the Permittee in accordance with the requirements found at 40 CFR 60.63(b).

[40 CFR 52.145(k)(7)(ii)(B)(2)]

(3) At the end of each kiln operating day, the Permittee shall calculate and record a new 30- day rolling average emission rate in lb/ton clinker from the arithmetic average of all valid hourly emission rates for the current kiln operating day and the previous 29 successive kiln operating days.

[40 CFR 52.145(k)(7)(ii)(C)]

(4) Upon and after the completion of installation of ammonia (NH_3) and/or urea injection on a unit (hereinafter referred to as NH_3 injection), the Permittee shall install, and thereafter maintain and operate, instrumentation to continuously monitor and record levels of NH_3 injection for that unit.

[40 CFR 52.145(k)(7)(ii)(D)]

5. Recordkeeping Requirements

The Permittee shall maintain the following records for at least five years:

a. All CEMS data, including the date, place, and time of sampling or measurement; emissions and parameters sampled or measured; and results.

[40 CFR 52.145(k)(9)(i)]

b. All records of clinker production.

[40 CFR 52.145(k)(9)(ii)]

c. Daily 30-day rolling emission rates of NO_X, calculated in accordance with Condition VI.I.4.b(2) of this attachment.

[40 CFR 52.145(k)(9)(iii)]

d. Records of quality assurance and quality control activities for emissions measuring systems including, but not limited to, any records specified by 40 CFR part 60, Appendix F, Procedure 1.

[40 CFR 52.145(k)(9)(iv)]

e. Records of NH_3 injection, as recorded by the instrumentation required in Condition VI.I.4.b(4) of this attachment.

[40 CFR 52.145(k)(9)(v)]

f. Records of all major maintenance activities conducted on emission units, air pollution control equipment, CEMS and clinker production measurement devices.

[40 CFR 52.145(k)(9)(vi)]

g. Any other records specified by 40 CFR part 60, subpart F, or 40 CFR part 60, Appendix F, Procedure 1.

[40 CFR §52.145(k)(9)(vii)]

6. Reporting Requirements

All reports and notifications required under Section VI of this attachment shall be submitted by the Permittee to the Arizona Department of Environmental Quality; to the U.S. Environmental Protection Agency, Region 9, Air Division via electronic mail to aeo_r9@epa.gov; and to the U.S. Environmental Protection Agency Enforcement Division via electronic mail to R9AirPermits@epa.gov. Reports required under Condition VI.I.6.c through Condition VI.I.6.g of this attachment shall be submitted within 30 days after the applicable compliance date in Condition VI.I.3 and at least semiannually thereafter, within 30 days after the end of a semiannual period. The Permittee may submit reports more frequently than semiannually for the purposes of synchronizing reports required under this section with other reporting requirements, such as the Title V monitoring report required by 40 CFR 70.6(a)(3)(iii)(A), but at no point shall the duration of a semiannual period exceed six months.

[40 CFR 52.145(k)(11)]

a. Prior to commencing construction of the NH_3 injection system, the Permittee shall submit to the EPA a report describing the design of the SNCR system. This report shall include:

(1) reagent type,

(2) description of the locations selected for reagent injection,

(3) reagent injection rate (expressed as a molar ratio of reagent to exhaust gas),

(4) equipment list,

(5) equipment arrangement, and

(6) a summary of kiln characteristics that were relied upon as the design basis for the SNCR system.

[40 CFR 52.145(k)(11)(i)]

b. Within 30 days following the NO_X compliance date in Condition VI.I.3 the Permittee shall submit to the EPA a report of any process improvement or debugging activities that were performed on the SNCR system. This report shall include:

(1) a description of each process adjustment performed on the SNCR system or the kiln,

(2) a discussion of whether the adjustment affected NO_X emission rates,

(3) a description of the range (if applicable) over which the adjustment was examined, and

(4) a discussion of how the adjustment will be reflected or accounted for in kiln operating practices.

(5) If CEMS data or kiln operating data were recorded during process improvement or debugging activities, the Permittee shall submit the recorded CEMS and kiln operating data with the report.

(6) The data shall be submitted in an electronic format consistent with and able to be manipulated by a spreadsheet program such as Microsoft Excel.

[40 CFR 52.145(k)(11)(ii)]

c. The Permittee shall submit a report that lists the daily 30-day rolling emission rates for NO_X.

[40 CFR 52.145(k)(11)(iii)]

d. The Permittee shall submit excess emissions reports for NO_X limits. Excess emissions means emissions that exceed the emissions limits specified in Condition VI.I.2 of this attachment. The reports shall include the following:

(1) the magnitude,

(2) date(s), and

(3) duration of each period of excess emissions,

(4) specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the unit,

(5) the nature and cause of any malfunction (if known), and

(6) the corrective action taken or preventative measures adopted.

[40 CFR 52.145(k)(11)(iv)]

e. The Permittee shall submit CEMS performance reports, to include dates and duration of each period during which the CEMS was inoperative (except for zero and span adjustments and calibration checks), reason(s) why the CEMS was inoperative and steps taken to prevent recurrence, and any CEMS repairs or adjustments.

[40 CFR 52.145(k)(11)(v)]

f. The Permittee shall also submit results of any CEMS performance tests specified by 40 CFR part 60, Appendix F, Procedure 1 (Relative Accuracy Test Audits, Relative Accuracy Audits, and Cylinder Gas Audits).

[40 CFR 52.145(k)(11)(vi)]

g. When no excess emissions have occurred or the CEMS has not been inoperative, repaired, or adjusted during the reporting period, the Permittee shall state such information in the reports required by Condition VI.I.6.e of this attachment.

[40 CFR 52.145(k)(11)(vii)]

7. Notification Requirements

a. The Permittee shall submit notification of commencement of construction of any equipment which is being constructed to comply with the NO_X emission limits in Condition VI.I.2 of this attachment.

[40 CFR 52.145(k)(13)(i)]

b. The Permittee shall submit semiannual progress reports on construction of any such equipment.

[40 CFR 52.145(k)(13)(ii)]

c. The Permittee shall submit notification of initial startup of any such equipment.

[40 CFR 52.145(k)(13)(iii)]

8. Equipment Operation

a. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the unit including associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions. Pollution control equipment shall be designed and capable of operating properly to minimize emissions during all expected operating conditions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Regional Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the unit.

[40 CFR 52.145(k)(14)(i)]

b. After completion of installation of NH_3 injection on a unit, the Permittee shall inject sufficient NH_3 to achieve compliance with NO_X emission limits set forth in Condition VI.I.2 of this attachment while preventing excessive NH_3 emissions.

[40 CFR 52.145(k)(14)(ii)]

9. Enforcement

Notwithstanding any other provision in Condition VI.I of this attachment, any credible evidence or information relevant as to whether the unit would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed, can be used to establish whether or not the Permittee has violated or is in violation of any standard or applicable emission limit in Condition VI.I of this attachment.

[40 CFR 52.145(k)(15)]

VII. OTHER FACILITIES (EXCEPT KILNS AND CLINKER COOLERS)

A. Applicability

The requirements under this Section are applicable to raw mills, finish mills, kiln feed silos, proportioning silos, clinker storage, finished product storage, conveyor transfer points, bagging and bulk loading and unloading systems, identified in last column of Equipment List in Attachment "D".

B. Particulate Matter

1. The Permittee shall not cause, allow or permit the discharge of particulate matter from any identifiable process source within any existing cement plant that commenced construction on or before August 17, 1971, to exceed the amounts calculated by one of the following equations:

a. For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

[A.A.C. R18-2-705.B]

$$E = 4.10\ P^{0.67}$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour.

b. For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E = 55.0P^{0.11} - 40$

where "E" and "P" are defined as indicated in Condition VI.B.1.a(1) above.

c. *The Permittee shall not cause or allow to be emitted into atmosphere from any dust collector gases which contain PM and PM_{10} emissions in excess of the following rates.*

[AAC R18-2-306.01, A.A.C. R18-2-331.A.3.a]
[Material Permit Conditions are indicated with underline and italics]

Dust Collector ID	PM Emission Limit (lbs/hr)	PM_{10} Emission Limit (lbs/hr)
H2-DC2	0.01	0.01
C2-DC3	0.334	0.334
D4-DC1	1.671	1.671
D4-DC2	0.668	0.668
F2-DC4	0.062	0.062
AC-DC1	0.373	0.373
CM-DC17	0.497	0.497
D2-DC4	0.166	0.166

d. The Permittee shall not cause or allow emissions which contain PM_{10} in excess of 0.005 gr/dscf from dust collector D2-1-DC1 for D2 Finish Mill, D2-1-M.

[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition V.C]

e. The Permittee shall not cause or allow emissions which contain PM_{10} in excess of 0.005 gr/dscf from the following dust collectors.

[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition VII.C]

C2-DC2, C2-DC3, C2-DC4, C2-DC5, C2-DC6, C2-DC7, C2-DC8, C2-DC9, C2-DC10, C2-DC11, C2-DC12, C2-DC13, D2-DC1, D2-DC3, D2-DC4, D2-DC5, D2-DC6,D2-DC7, F2-DC1, F2-DC4, D4-DC1, D4-DC2, AC-DC1, CM-DC17

2. Opacity

a. The Permittee shall not cause to be discharged from any raw material, clinker, or finished product storage bin, conveying system transfer point, bagging system, raw material dryer, raw & finish mills, and bulk loading or unloading system any gases which exhibit opacity in excess of 10 percent.

[40 CFR 63.1345]

b. The Permittee shall not discharge into the atmosphere from any affected facility constructed after August 17, 1971, any gases which exhibit 10 percent opacity, or greater.

[40 CFR 60.62(c)]

c. The Permittee shall not cause or allow visible emissions from the D4 Raw Mill Additive Feed Hopper, D4-HOP in excess of 10 percent opacity.

[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition III.B]

d. The Permittee shall not cause or allow visible emissions from the D4 Raw Mill Rejects Bin, D4-SB1 in excess of 20 percent opacity.

[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition IV.B]

3. Air Pollution Control Requirements

a. *At all times including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable,* maintain and *operate all affected sources and the following dust collectors in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306.A.2, A.A.C. R18-2-331.A.3.e & A.A.C. R18-2-331.B]
[Material Permit Conditions are indicated with underline and italics]

AC1-DC1, AC2-DC1, AC3-DC1, AC4-DC1, CM1-DC1, CM2-DC1, CM3-DC1, CM4-DC1, CM5-DC1, CM6-DC1, CM7-DC1, CM7-DC2, CM7-DC3, D2-1-DC1, D3-1-DC1, D3-1-DC2, D3-1-DC3, BL-DC1, BL-DC2, BL-DC3, BL-DC4, BL-DC5, BL-DC6, BL-DC7, BL-SB5-DC1, BL-SB5-DC2, BL-SB5-DC3, C2-DC2, C2-DC3, C2-DC4, C2-DC5, C2-DC6, C2-DC7, C2-DC8, C2-DC9, C2-DC10, C2-DC11, C2-DC12, C2-DC13, CM-MA-DC1, AC-DC1, AC-DC3, CM-DC4, CM-DC5, CM-DC8, CM-DC9, CM-DC10, CM-DC11, CM-DC12, CM-DC14, CM-DC15, CM-DC16, CM-DC17, D2-DC1, D2-DC3, D2-DC4, D2-DC5, D2-DC6, D2-DC7, D4-DC1, D4-DC2, F2-PS-DC1, F2-PS-DC2, F2-PS-DC3, F3-KS-DC1, F2-DC1, F2-DC4, F2-SB2-DC, F3-DC1, F3-DC2, H4-K1-DC, H4-K2-DC, H4-K3-DC, H2-KB1-DC, H2-KB3-DC, H2-DC1, H2-DC2, H2-DC3, H2-DC4, H2-DC5, H4-DC1, H5-DC1, H5-5-DC2, PH-DC1, PH-DC2, PH-DC3, PH-DC4, PH-DC5, AC-BE2-DC, D2-PC

b. D4 Raw Mill Additive Feed Hopper, D4-HOP

(1) When the D4 Raw Mill Additive Feed Hopper is in use, the Permittee shall use water sprays as needed to comply with the emission limits in Condition VII.B.2.c of this Attachment.

(2) The Permittee shall inspect the water spray system annually to ensure proper operation.

[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition III.C]

c. The D4 Raw Mill Rejects Bin D4-SB1

(1) The D4 Raw Mill Rejects Bin shall be in an enclosed bin which is controlled through the raw mill system.

(2) The Permittee shall inspect the bin enclosure and associated control systems for leaks and malfunctions during planned, periodic maintenance.

[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition IV.C]

d. During the periods when the clinker is transferred to trucks from the Clinker Bypass Bin H2-SB1, the Permittee shall take all measures, including minimizing the gap between the chute and the truck, to minimize fugitive emissions.

[A.A.C R18-2-306.A.3.c]

4. Opacity Monitoring Requirements

a. Opacity Monitoring for raw material, clinker, or finished product storage bin, conveying system transfer point, bagging system, raw material dryer and bulk loading or unloading system except H2-DC3 for Clinker Bypass Bin H2-SB1.

[40 CFR 63.1350(f)(1)]

(1) The Permittee shall conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22 of Appendix A–7 to 40 CFR 60. The performance test must be conducted while the affected source is in operation.

[40 CFR 63.1350(f)(1)(i)]

(2) If no visible emissions are observed in six consecutive monthly tests for any affected source, the Permittee may decrease the frequency of performance testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, the Permittee shall resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

[40 CFR 63.1350(f)(1)(ii)]

(3) If no visible emissions are observed during the semi-annual test for any affected source, the Permittee may decrease the frequency of performance testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual performance test, the Permittee shall resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

[40 CFR 63.1350(f)(1)(iii)]

(4) If visible emissions are observed during any Method 22 performance test, the Permittee shall conduct 30 minutes of opacity observations, recorded at 15-second interval in accordance with Method 9 of Appendix A–4 to 40 CFR 60. The Method 9 performance test shall begin within 1 hour of any observation of visible emissions.

[40 CFR 63.1350(f)(1)(iv)]

(5) The requirements to conduct Method 22 visible emissions monitoring do not apply to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. The enclosures for these transfer points shall be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.

[40 CFR 63.1350(f)(1)(v]

(6) If any partially enclosed or unenclosed conveying system transfer point is located in a building, the Permittee shall conduct a Method 22 performance test according to the requirements of Conditions VII.B.4.a(1) through VII.B.4.a(4) above for each such conveying system transfer point located within the building, or for the building itself, according to Condition VII.B.4.a(7) below.

[40 CFR 63.1350(f)(1)(vi)]

(7) If visible emissions from a building are monitored, the requirements of Conditions VII.B.4.a(1) through VII.B.4.a(4) above apply to the monitoring of the building, and, the Permittee must also test visible emissions from each side, roof, and vent of the building for at least 10 minutes.

[40 CFR 63.1350(f)(1)(vii)]

b. Opacity Monitoring during Clinker Bypass bin operation

(1) During the periods when the clinker bypass bin, H2-SB1 is in operation and loading clinker to trucks or to ground, the Permittee shall conduct a 10-minute visible emissions test of each affected sources in accordance with Method 22 of Appendix A–7 to 40 CFR 60.

[40 CFR 63.1350(f)(1)(i)]

(2) If visible emissions are observed during any Method 22 test, the Permittee shall conduct 30 minutes of opacity observations, recorded at 15-second interval in accordance with Method 9 of Appendix A–4 to 40 CFR 60. The Method 9 performance test shall begin within 1 hour of any observation of visible emissions.

[40 CFR 63.1350(f)(1)(ii)]

(3) If the opacity observation exceeds 10%, the Permittee shall report it as an excess emission in accordance with Section XI of Attachment “A”.

[40 CFR 63.1350(f)(1)(iii)]

c. Opacity Monitoring for Dust Collectors under Condition VII.B.1.e

(1) The Permittee shall conduct a monthly 1-minute visible emission test of each dust collector listed in Condition VII.B.1.e of this Attachment in accordance with EPA Reference Method 22 of Appendix A to 40 CFR Part 60.
[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition VII.D]

(2) If visible emissions are observed, an investigation of the dust collector will be initiated within 24 hours to determine if there is a need for corrective action. If corrective action is required, it shall be implemented as soon as practicable in order to advert or minimize any possible exceedances of the emission limit.
[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition VII.D]

(3) If no visible emissions are observed in six consecutive monthly tests, the testing frequency may be reduced from monthly to a semi-annual test. If visible emissions are observed during any semi-annual test, the visible emission testing will revert back to monthly testing until no visible emissions are observed in six consecutive monthly tests.
[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition VII.D]

(4) If no emissions are observed during the semi-annual test, the testing frequency may be reduced from semi-annual to an annual test. If visible emissions are observed during any annual test, the visible emission testing will revert back to monthly testing until no visible emissions are observed in six consecutive monthly tests.
[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition VII.D]

(5) If visible emissions are observed during any EPA Reference Method 22 test, the Permittee shall conduct a 6-minute test of opacity in accordance with EPA Reference Method 9 of Appendix A to 40 CFR Part 60. The EPA Reference Method 9 test shall begin within one hour of any observation of visible emissions.
[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition VII.D]

d. Opacity Monitoring for Raw or Finish Mills

(1) The Permittee shall monitor opacity by conducting daily visual emissions observations of the mill sweep and air separator particulate matter control devices (PMCD) of the raw or finish mills in accordance with the procedures of Method 22 of Appendix A–7 to 40 CFR 60. The duration of the Method 22 performance test shall be 6 minutes.
[40 CFR 63.1350(f)(2)(i)]

(2) Within 24 hours of the end of the Method 22 performance test in which visible emissions were observed, the Permittee shall conduct a follow up Method 22 performance test of each stack

from which visible emissions were observed during the previous Method 22 performance test.

[40 CFR 63.1350(f)(2)(ii)]

(3) If visible emissions are observed during the follow-up Method 22 performance test from any stack from which visible emissions were observed during the previous Method 22 performance test, the Permittee shall conduct an opacity test of each stack from which emissions were observed during the follow up Method 22 performance test in accordance with Method 9 of Appendix A–4 to part 60 of this chapter. The duration of the Method 9 test shall be 30 minutes.

[40 CFR 63.1350(f)(2)(iii)]

e. If visible emissions are observed during any Method 22 visible emissions test conducted under Conditions VII.B.4.a throughVII.B.4.d above, the Permittee shall initiate, within one-hour, the corrective actions specified in the operation and maintenance plan in Condition II.A.2 above.

[40 CFR 63.1350(f)(3)]

f. As an alternative to the requirements in Condition VII.B.4.d above, the raw mill or finish mill may be equipped with a continuous opacity monitoring system (COMS) or bag leak detection system (BLDS).

[40 CFR 63.1350(f)(4)]

(1) If the Permittee chooses to install a COMS in lieu of conducting the daily visual emissions testing, *the Permittee shall install*, *calibrate*, maintain, and continuously *operate the COMS at the outlet of the PM control device of the raw mill or finish mill in accordance with the requirements in subpart A of 40 CFR Part 63 and PS–1 of Appendix B to 40 CFR Part 60*.

[40 CFR 63.1350(f)(4)(i), A.A.C. R18-2-331.A.3.c]
[Material permit conditions are indicated by underline and italics]

(2) If the Permittee choose to install a BLDS in lieu of conducting the daily visual emissions testing, *the Permittee shall install*, *calibrate,* maintain, and continuously operate *a bag leak detection system in accordance with the requirements in 40 CFR 63.1350(m)(10) and (11).*

[40 CFR 63.1350(f)(4)(ii), A.A.C. R18-2-331.A.3.c]
[Material permit conditions are indicated by underline and italics]

g. Bag Leak Detection System (BLDS) for detecting leaks in dust collector D2-1-DC1 for D2 Finish Mill

[Consent Decree 4:10-CV-00573-DCB Exhibit A Condition V.D]

(1) *The Permittee shall install, calibrate*, maintain, and operate *a Bag Leak Detection System for detecting leaks in dust collector D2-1-DC1*. This condition is not material, as defined in Arizona Administrative Code R18-2-331 and Arizona Revised Statutes section 49-464(G), in the event failure to comply is due to a

sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306.A.3, R18-2-331.A.3.c, R18-2-331.B]
[Material Permit Conditions are indicated with underline and italics]

(2) The Bag Leak Detection System shall meet the following requirements:

(a) The Bag Leak Detection System must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 0.0044 grains per actual cubic foot or less. "Certify" shall mean that the instrument manufacturer has tested the instrument on gas streams having a range of particle size distributions and confirmed by means of valid filterable PM tests that the minimum detectable concentration limit is 0.0044 grains per actual cubic foot or less.

(b) The sensor on the Bag Leak Detection System must provide output of relative PM emissions.

(c) The Bag Leak Detection System must have an alarm that will activate automatically when it detects a significant increase in relative PM emissions greater than a preset level.

(d) The presence of an alarm condition should be clearly apparent to facility operating personnel.

(e) For a positive-pressure fabric filter, each compartment or cell must have a bag leak detector. For a negative-pressure or induced-air fabric filter, the bag leak detector must be installed downstream of the fabric filter. If multiple bag leak detectors are required (for either type of fabric filter), detectors may share the system instrumentation and alarm.

(f) The Bag Leak Detection System must be installed, operated, adjusted, and maintained so that it is based on the manufacturer's written specifications and recommendations.

(g) The baseline output of the Bag Leak Detection System must be established as follows:

(i) Adjust the range and the averaging period of the device; and

(ii) Establish the alarm set points and the alarm delay time.

(h) After initial adjustment, the range, averaging period, alarm set points, or alarm delay time may not be adjusted except as specified in the operations and maintenance plan. In no event may the range be increased by more than 100 percent or decreased by more than 50 percent over a 1-calendar year period unless the Permittee certifies in writing to the Director that the Dust Collector has been inspected and found to be in good operating condition.

(i) The Permittee shall maintain and operate the fabric filter such that the bag leak detector alarm is not activated and alarm condition does not exist for more than 5 percent of the total operating time in a 6-month block period. Each time the alarm activates, alarm time will be counted as the actual amount of time taken by the owner or operator to initiate corrective actions. If inspection of the fabric filter demonstrates that no corrective actions are necessary, no alarm time will be counted. Permittee shall continuously record the output from the Bag Leak Detection System during periods of normal operation. Normal operation does not include periods when the Bag Leak Detection System is being maintained or during startup, shutdown or malfunction.

h. Compliance Assurance Monitoring (CAM)

The following dust collectors shall be subject to CAM requirements:

F2-DC1, F2-DC4, AC-DC1, AC-BE2-DC, F2-PS-DC3, H4-K1-DC, H4-K2-DC, H4-K3-DC, H2-DC2, C2-DC4, C2-DC11, C2-DC12, D2-DC1, D2-DC3, D2-DC4, D2-1-DC1, BL-DC1, BL-DC2, BL-DC3, BL-DC4 and BL-DC6.

(1) Indicators:

Visible emissions

[40 CFR 64.3(a)(1)]

(2) Monitoring Approach:

(a) Visible emissions from each baghouse shall be monitored once daily using EPA Reference Method 22.

(b) Bags, seals, and baghouse compartments shall be inspected annually for each baghouse.

[40 CFR 64.3(b)(4)(iii)]

(3) Indicator Range/Threshold: No visible emissions.

[40 CFR 64.3(a)(2) & (3)]

(4) Excursions Determinations:

The following shall constitute an excursion event:

(a) Any opacity observed during the visible emission survey constitutes an excursion event.

(b) Any bags or seals in poor condition, or accumulation of dust in the baghouse compartment during annual inspection.

[40 CFR 64.6(c)(2)]

(5) Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the emission points are operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The Permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

[40 CFR 64.6(c)(3), 64.9(c)]

(6) Response to excursions

(a) Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emission point (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown, or malfunction, and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action, or any necessary follow-

up actions to return operations to within the indicator range, designated condition, or below applicable emission limitation or standard, as applicable.

[40 CFR 64.7.(d)(1)]

(b) Determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation, and maintenance procedures and records, and inspection of the control device, associated capture system, and process.

[40 CFR 64.7.(d)(2)]

(c) After approval of monitoring under this part, if the Permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the Permittee shall promptly notify the Department, and if necessary, submit a proposed modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, re-establishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

[40 CFR 64.7(e)]

(d) Excursions shall be reported as required by Condition VII.B.4 of Attachment "A" of this permit. The report shall include, at a minimum, the following:

[A.A.C. R18-2-309(2)(c)(iii)]

(i) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursion or exceedances, as applicable, and the corrective actions taken; and

[40 CFR 64.9(a) (2)(i)]

(ii) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitoring downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable).

[40 CFR 64.9(a) (2)(ii)]

5. Compliance and Performance Testing Requirements

a. Particulate Matter

To demonstrate compliance with the emission standards in Condition VII.B.1.c, d and e, the Permittee shall conduct performance test on dust collectors in identified in Condition VII.B.1.c, d and e in accordance with EPA Reference Method 5 of 40 CFR 60, Appendix A once in the permit term.

[A.A.C. R18-2-312.A, A.A.C. R18-2-306.A.3.c]

b. Opacity

(1) The Permittee shall conduct initial performance test to demonstrate compliance with the opacity emissions standards in Condition VII.B.2.a by using the performance test methods and procedures in given below. The maximum 6-minute average opacity exhibited during the performance test period shall be used to determine whether the affected source is in compliance with the standard.

[40 CFR 63.1348(a)(2)]

(a) The Permittee shall conduct opacity tests in accordance with Method 9 of Appendix A–4 to 40 CFR 60. The duration of the Method 9 performance test must be 3

(b) hours (30 6-minute averages), except that the duration of the Method 9 performance test may be reduced to 1 hour if

(i) There are no individual readings greater than 10 percent opacity;

(ii) There are no more than three readings of 10 percent for the first 1-hour period

[40 CFR 63.1349(b)(2)(i)-(ii)]

(c) For batch processes that are not run for 3-hour periods or longer, compile observations totaling 3 hours when the unit is operating.

[40 CFR 63.1349(b)(2)]

(2) The Permittee shall demonstrate continuous compliance with the opacity standards in Condition VII.B.2.a by complying with the monitoring requirements in Condition VII.B.4.a. The Permittee initiate corrective actions within one hour of detecting visible emissions above the applicable limit.

[40 CFR 63.1348(b)(3)]

(3) The Permittee shall perform annual performance tests on Raw Mill Feed Hopper, D4-HOP, and Raw Mill Reject Bin, D4-SB1in accordance with Method 9 of 40 CFR 60 Appendix A to demonstrate compliance with the opacity standards in Conditions VII.B.2.c and VII.B.2.d.

[Consent Decree 4:10-CV-00573-DCB Exhibit A Conditions III.D and IV.D]

6. Recordkeeping Requirements

In addition to applicable recordkeeping and reporting requirements in Condition VI.I.5, the Permittee shall comply with the following requirements:

a. The Permittee shall keep records of rolling 12-month total of limestone added in the D3 mill.

[A.A.C. R18-2-306.A.3.c]

b. The Permittee shall keep records of periods of operations of Clinker Bypass Bin, H2-SB1.

[A.A.C R18-2-306.A.3.c]

C. Permit Shield

Compliance with the conditions of this Part shall be deemed compliance with A.A.C. R18-2-705.B & C, 40 CFR 63.1345, 60.62(c), 63.1350(f)(1), (2), (3) and (4), 40 CFR 64, and Consent Decree 4:10-CV-00573-DCB.

[A.A.C. R18-2-325]

VIII. SECONDARY MATERIALS UTILIZATION PROCEDURES

A. Fuels

1. The Permittee shall only burn the following fuels in Kilns 1, 2, 3, and Kiln 4 in-line kiln/raw mill:

[Significant Permit Revision No. 1000547 Condition VII]

Fuel Type	**Maximum Fuel Proportion [1]**	
	Kilns 1, 2, 3	**Kiln 4**
Coal	100	100
Coke	40	~~12~~100
Natural Gas	100	100
Diesel	100	100
No. 2 Fuel Oil	100	100
Bunker C Oil	100	100

Fuel Type	Maximum Fuel Proportion [1]	
	Kilns 1, 2, 3	Kiln 4
Chopped Tires (< 6" x 6")	0	~~34~~100
On-Specification Used Oil Fuel	0	~~41~~100
Wood Chips	0	~~22~~100
Jet Fuel	0	~~5~~100
Nonhazardous Secondary Materials (NHSMs) [2]	0	100

Note -1: Maximum Fuel Proportion is defined as the maximum percent of the actual heat input provided by a fuel component in a fuel mixture.

Note -2: NHSMs meeting the provisions of 40 CFR 241 Subpart B, Identification of Non-Hazardous Secondary Materials that are Solid Wastes When Used as Fuels or Ingredients in Combustion Units (NHSMs Rule). NHSMs include, but are not limited to, engineered fuels, biomass fuels (including, but not limited to, construction and demolition wood, pistachio shells, almond shells and yard clippings), paper cardboard, biosolids, and dust collector bags generated on-site.

2. This permit does not authorize the use of any other fuels (i.e., any fuels other than those listed in above, including, but not limited to, off-specification used oil fuel, hazardous waste or hazardous waste fuel without prior approval by ADEQ.

[Significant Permit Revision No. 1000547 Condition VII]

3. The Permittee may conduct short-term performance testing to evaluate emissions from fuel with percentages greater than those allowed above only after the Director's approval of a detailed test plan that identifies the test duration, pollutants to be measured and the test methods.

[A.A.C. R18-2-306.A.2]

4. The Permittee shall apply for a significant permit revision in accordance with A.A.C. R18-2-320 to use a fuel that is not listed in Condition VIII.A.1 above or to use a fuel percentage that is greater than listed in Condition VIII.A.1 above. The Permittee may be required to conduct performance testing to test the new fuel or the increased fuel percentage. Required performance tests may include, but not be limited to, any of the following:

[Permit No. M191365P1-99 Condition IV, A.A.C. R18-2-319.A.6]

Parameter/Pollutant	EPA Reference Method
Traverse Points	1
Velocity	2
Molecular Weight	3
Moisture Content	4
Total PM (Particulate Matter)	5

SO_2	6C
NO_x	7E

Parameter/Pollutant	EPA Reference Method
Sulfuric Acid Mist	8
CO - NDIR	10
H_2S Content of Fuel	11
Total Fluoride (Specific Ion Electrode)	13B
Total Reduced Sulfur (TRS)	15A/16A
Dioxin and Furan, Polynuclear Aromatic Hydrocarbons, and Polychlorinated Biphenyls	23
VOC	25 or 18/25A
Metals	29
PM_{10} (in-stack)	201A
Condensable Particulate Matter	202
Chromium	306
Formaldehyde	316 or 320
HCl	321

5. Fuels Analysis

This Part is not based on a federal applicable requirement and is therefore not federally enforceable.

[A.A.C. R18-2-306.B.2, Significant Permit Revision No. 1000547 Condition IX]

a. All records of analyses provided by the fuel supplier concerning the higher heating value, sulfur content and hazardous air pollutants (HAPs) in the fuel shall be maintained on-site and available for review by the Department.

b. In the event the fuel supplier does not provide the analyses specified in Condition VIII.A.5.a above, the Permittee shall test or cause to be tested for higher heating value, sulfur content and HAPs (as defined in Clean Air Act § 112(b)(1)) the first fuel delivery of coal, coke, diesel fuel, No. 2 Fuel Oil, Bunker C oil, or on-specification used oil fuel from each fuel supplier or mine location or oil refinery, the first delivery of wood chips from each

supplier, and every month for shredded tires when shredded tires are used as fuel. The Permittee shall test these fuels as follows:

(1) Unless otherwise specified, all sample collection, sample preparation, and analyses performed or caused to be performed by the Permittee shall be conducted according to the current ASTM Standards or EPA Testing Methods.

(2) Prior to testing for HAPs, the Permittee shall submit to the Department in writing a list of the specific HAPs (in addition to those specified below in Condition VIII.A.5.c(2) for which the concentrations are to be determined. The list should be based on an estimate of the potential for the HAP being present in the individual fuel to be tested in sufficient quantity to lead to a significant air quality impact as described in A.A.C. R18-2-1708.C, Table 3.

(3) The heating value and the sulfur content shall be calculated based on vendor testing.

c. In the event the fuel supplier does not provide the analyses specified in Condition VIII.A.5.a above for on-specification used oil fuel, the Permittee shall cause to be tested such used oil fuel as follows:

(1) Used oil fuel shall be field tested for total halogens, measured as chlorides, at a minimum, before it is unloaded into an on-site storage tank; the screening method used shall be Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-486, 3rd Edition, Method 9077 or a comparable method approved by the department in writing prior to its use; those shipments that do not meet the appropriate used oil fuel specifications listed in A.R.S.

(2) § 49-801(B) shall be rejected.

(3) The following HAPs concentrations shall be measured for each on-site tank of fuel before it is used: Arsenic, Cadmium, Chromium, Lead, Polychlorinated Biphenyls (PCBs) and total halogens; those fuels that do not meet the appropriate used oil fuel specifications listed in A.R.S. § 49-801(A) (5) and A.R.S. § 49-801(B) shall not be fired in any kiln.

B. Secondary Materials (Raw Feed Materials) Utilization Procedures

This Part is not based on a federal applicable requirement and is therefore not federally enforceable. The Permittee shall comply with the following:

[A.A.C. R18-2-306.B.2, Significant Permit Revision No. 1000547 Condition IX]

1. "Secondary materials" are materials generated by a party other than the Permittee that are to be reprocessed or reused and which are rich in oxides of calcium, alumina, iron or silica. This definition does not include earthen ores mined

exclusively for their oxide content where no extraction or beneficiation other than mining, crushing, screening, physical separation, or washing with water have occurred.

2. Pre-Acceptance Procedures: The Permittee shall require a completed and signed Alternate Raw Material Recycling Questionnaire with analyses and a representative sample of the secondary material from the generator. The Permittee shall re-analyze the sample for any analyses not performed by the generator, and evaluate the secondary material to determine whether the physical characteristics sufficiently compare with the generator description and the MSDS supplied by the generator and to determine, based upon the information supplied by the generator or developed independently by the Permittee, if the secondary material is regulated as a hazardous waste under the Resource Conservation and Recovery Act and the Arizona Hazardous Waste Management Act (hereinafter collectively "RCRA"). If the secondary material is determined to be a hazardous waste regulated under RCRA, the Permittee shall not use the secondary material.

3. Acceptance Procedures: Before secondary materials can be accepted at the facility, the secondary material must be weighed unless accompanied by a certified weighmaster's ticket; the ticket must have the generator's name and an accurate material description. During unloading, the secondary material will be compared to the MSDS and the Recycling Questionnaire and unloading will be suspended until any inaccuracies have been resolved. The Permittee will also obtain a representative sample of the secondary material being unloaded.

4. All records concerning the Permittee's evaluation of secondary materials shall be maintained on-site and available for review by the Department.

IX. ALTERNATE RAW MATERIAL SCREENING ASSESSMENT FOR DIOXINS, FURANS AND PRECURSORS

The Permittee shall comply with the following Alternate Raw Materials Screening Assessment for new alternate raw materials.

[A.A.C. R18-2-306.A.2, Condition I.P of Attachment "B" Minor Revision #43448]

A. General

1. This section outlines a screening assessment designed to ensure that new alternate raw materials CalPortland Company considers for use at its Rillito cement plant do not contribute to dioxin and furan (D/F) emissions that might exceed the emission standard as identified in 40 CFR §63.1343(b). In effect, the screening assessment provides a means to assist in determining whether a new alternate raw material might be a change in operations that may adversely affect compliance with the applicable emission standard.

2. If the results of the screening assessment are below the screening levels identified in the attached table, the Permittee is free to use the material without conducting performance tests or further assessments. If any of the results are above the applicable screening levels, the Permittee would be required to conduct and pass a

performance test in accord with 40 CFR §63.1349(e) if it intends to use the alternate raw material.

3. Nothing in this screening assessment shall be construed to (1) limit ADEQ's authority to request a performance test under specific permit terms of this Permit, or any other specifically applicable requirements; or (2) provide an independent basis to request a performance test.

B. Screening Assessment Procedure

1. Applicability

[A.A.C. R18-2-306.A.2, Condition I.P of Attachment "B" Minor Revision #43448]

a. This screening assessment will be performed for any "new" "alternate raw material".

"New" means an alternate raw material that has not been in use during a previously conducted performance test within the immediately preceding five years. Once the Permittee conducts an initial screening assessment or performance test with the alternate raw material, subsequent shipments of that alternate raw material would not require additional analysis unless the supplier informed the Permittee of a change in the supplier's process that might affect the concentration of the compounds listed in the attached table.

"Alternate raw material" is defined as a material generated by a party other than Rillito cement plant that is to be reprocessed or reused and which is rich in oxides of calcium, alumina, iron or silica. This definition does not include earthen ores where no extraction or beneficiation other than mining, crushing, screening, physical separation, or washing with water have occurred. This definition is equivalent to the definition of "Secondary material", defined in Permit M190310P1-00, Attachment B, Condition X.D.1, and used interchangeably therein with "alternate raw material".

b. Use of the screening assessment will not be required for earthen ores where no extraction or beneficiation other than mining, crushing, screening, physical separation, or washing with water have occurred.

c. If the Permittee wishes to use the material, the Permittee will provide to ADEQ for review the results of the screening assessment. The Permittee may use the material 30 calendar days after ADEQ receives the screening assessment unless, within that 30-day period, the Permittee receives written notice from ADEQ of its objection to the use of the material. ADEQ's written notice shall be deemed a final, appealable agency action as defined in A.R.S. §41-1092(3).

d. Sampling will be performed on each new alternate raw material prior to its first use if it is fed with normal raw materials into the kiln. Materials fed directly into a hot zone in the kiln, such as the feed shelf between the

kiln and calciner, will not require analysis because temperatures in these zones will instantaneously destroy any compounds listed in the table.

e. In addition, suppliers of all alternate raw materials being utilized at the facility will be required by contract to notify the Permittee, prior to shipment, of any change in their process that might affect the concentration of the compounds listed in the attached table. If a supplier so notifies the Permittee, the Permittee will perform the screening assessment on the alternate raw material that is the subject of the notification regardless of whether a previous screening assessment or performance test has been conducted on that alternate raw material. The Permittee will then follow the procedures set forth herein for using new alternate raw materials.

2. Selected Compounds

The compounds listed in the table were selected from 40 CFR Part 261, Appendix VIII, as compounds that could create an environment where a cement kiln could emit increased dioxin and furans (>0.20 toxicity equivalent (TEQ) ng/dscm @ 7% O_2, over 204°C) even if the air pollution control equipment is operated below pre-established temperature limits. Because the primary formation mechanism for dioxin and furan emissions is controlled by controlling the air pollution control device inlet temperature, only the identified compounds could be expected to cause increased dioxin and furan emissions under other conditions.

[A.A.C. R18-2-306.A.2, Condition I.P of Attachment "B" Minor Revision #43448]

3. Screening Levels

The screening levels in the table are conservative. The single level set on tetra through octa chlorinated Polychlorinated dibenzo-p-dioxins (PCDD)/ Polychlorinated dibenzo furans (PCDFs) represents a conservative calculation that assumes none of the dioxins are destroyed but may be reformed. In fact, the screening level is lower than the level of dioxins and furans found in typical urban soils.

A number of conservative factors were used to develop the screening level including:

- A conservative TEQ versus total PDCC/PCDF ratio,
- The assumption that 10% of the raw feed is the alternate raw material,
- The assumption that all PCDD/PCDFs entering the system exit the stack (data from the facility indicated a significant portion is actually destroyed)
- The assumptions that background PCDD/PCDF emissions are up to half the maximum achievable control technology (MACT) emission limit.

Similarly, the screening level for Polychlorinated Biphenyls (PCBs) is well below the 50 ppm PCB limit established under Toxic Substances Control Act (TSCA). It is based on the experience of a cement kiln in Canada that accidentally used metal casting sand contaminated with PCBs. The screening level for the chlorinated phenols is based on the potential for these chlorinated phenols to contain up to 1 ppm dioxins and furans as well as their potential to form small amounts of dioxins and furans during thermal decomposition.

[A.A.C. R18-2-306.A.2, Condition I.P of Attachment "B" Minor Revision #43448]

4. Test Methods

Test methods listed for each compound are the most current EPA SW-846 methods. Older or alternative methods that can be demonstrated to provide quantitation at the recommended limit may also be used. All of the compounds identified can be detected at or below the screening levels using the recommended analytical methods. Screening levels are considered site specific for the Permittee. The Permittee may raise one or more of the screening levels in the future based on the results of further testing, upon review and approval by ADEQ.

[A.A.C. R18-2-306.A.2, Condition I.P of Attachment "B" Minor Revision #43448]

5. Procedure if Results are Above Screening Levels

If sampling demonstrates that a new alternate raw material is above the screening levels shown in the attached table and the Permittee intends to use the material, it must conduct a performance test in accordance with the requirements of 40 CFR §63.1349(e). The Permittee will provide prior notice of the test in accordance with 40 CFR §63.1349(e). Following the test, the Permittee will not use the new alternate raw material until it submits a notification of compliance status demonstrating that the performance was successful. If the performance test results are greater than the applicable emission standards, the Permittee will not use the new alternate raw material in its process.

[A.A.C. R18-2-306.A.2, Condition I.P of Attachment "B" Minor Revision #43448]

Compound Screening Levels

Compound (or compound class)	Analytical Method*	Screening Level*** (mg/kg)
Polychlorinated biphenyls	8082A	1
Heptachlorodibenzo-p-dioxins	8280B/8290A	$6x10^{-5}$**
Heptachlorodibenzofurans	8280B/8290A	$6x10^{-5}$**
Hexachlorodibenzo-p-dioxins	8280B/8290A	$6x10^{-5}$**
Hexachlorodibenzofurans	8280B/8290A	$6x10^{-5}$**

Octachlorodibenzo-p-dioxin	8280B/8290A	$6x10^{-5}$**
Octachlorodibenzofurans	8280B/8290A	$6x10^{-5}$**
Pentachlorodibenzo-p-dioxins	8280B/8290A	$6x10^{-5}$**
Pentachlorodibenzofurans	8280B/8290A	$6x10^{-5}$**
Tetrachlorodibenzo-p-dioxins	8280B/8290A	$6x10^{-5}$**
Tetrachlorodibenzofurans	8280B/8290A	$6x10^{-5}$**
Tetrachlorophenol	8270D	0.66
Pentachlorophenol	8270D	0.66

* From SW-846, Third Edition, January 1998 Revision.
** Limit is total for all TCDDs-OCDDs and TCDF → OCDFs.
*** Based on 10% alternative raw material substitution.

X. UNCLASSIFIED SYSTEMS

A. Applicability

This Section is applicable to process sources identified in Section XIII of the Equipment List in Attachment "D."

B. Emission Limitations and Standards

1. Particulate Matter

a. The Permittee shall not cause, allow, or permit the discharge of particulate matter into the atmosphere in any one hour in total quantities in excess of the amounts calculated by one of the following equations:
[PCC 17.16.430.A.1]

(1) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$E = 3.59P^{0.62}$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour; and

P= the process weight rate in tons-mass per hour.

(2) For process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E= 17.31P^{0.16}$

Where "E" and "P" are defined as indicated in Condition X.B.1.a(1) above.

b. For purposes of Condition X.B.1.a above, the total process weight from all similar units employing a similar type process shall be used in determining the maximum allowable emission of particulate matter.

[PCC 17.16.430.B]

2. Opacity

a. The opacity of any plume or effluent from any existing, stationary, point source shall not be greater than 20%.

[A.A.C. R18-2-702.B.3, PCC 17.16.130.B.3]

b. If the presence of uncombined water is the only reason for an exceedance of the visible emissions requirement in Condition X.B.2.a above, the exceedance shall not constitute a violation of the applicable opacity limit.

[A.A.C. R18-2-702.C, PCC 17.16.130.C]

C. Air Pollution Prevention Requirements

At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, operate the following bin vent filters to minimize particulate matter emissions and comply with the applicable emission limitations and standards of Condition X.B above.

[A.A.C. R18-2-306.A.2]

D. Monitoring, Recordkeeping, and Reporting Requirements

A certified Method 9 observer shall conduct the periodic opacity monitoring method specified in Condition I.A above on a monthly basis from the emission units subject to Section X, when in operation.

[A.A.C. R18-2-306.A.3.c]

XI. REGIONAL HAZE REQUIREMENTS

A. Applicability

This section applies to the Iron Stockpile for the reduction of PM_{10} as required per the Regional Haze Rule.

B. Air Pollution Control

At all times, the Permittee shall operate and maintain *the Iron Stockpile three-sided windbreak in a manner consistent with safety and good air pollution control practices for minimizing emissions.*

[A.A.C. R18-2-306.A.2 and A.A.C. R18-2-331.A.3.e]
[Material permit conditions are indicated by underline and italics]

C. Monitoring, Recordkeeping and Reporting Requirements

1. The Permittee shall perform monthly inspections of the Iron Stockpile three-sided windbreak required by Condition XI.B to ensure it is in proper working condition.

2. The Permittee shall keep a record of the date of the inspection, the name of the inspector, and the results of the inspection. If corrective action was necessary, the Permittee shall record a description of the corrective action.

[A.A.C. R18-2-306.A.3.c]

ATTACHMENT "D": EQUIPMENT LIST

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
I: QUARRY CRUSHER SYSTEM							
Truck Dump	Hopper	150 tons	1971	N/A	N/A	N/A	Att. B, Sec. III.C
B2-BC1	Belt Conveyor	1200 tph	Pre August 1971	Rex Chain Belt	N/A	N/A	Att. B, Sec. III.C
B2-BF1	Belt Feeder	1200 tph	Pre August 1971	Stephens Adamson	N/A	N/A	Att. B, Sec. III.C
B2-IC1	Impact Crusher	1200 tph	2025	Hazemag	HPI 2022	1A 77388/91900 2926	Att. B, Sec. III.E
B2-PF1	Pan Feeder	1200 tph	Pre August 1971	Stephens Adamson	N/A	N/A	Att. B, Sec. III.C
B2-VG1	Vibrating Grizzly	1200 tph	2025	Deister	PSP-1712	2007037	Att. B, Sec. III.E
B3-BC1	Belt Conveyor	1200 tph	Pre August 1971	Rex Chain Belt	N/A	N/A	Att. B, Sec. III.C
B3-BC2	Belt Conveyor	1200 tph	Pre August 1971	Rex Chain Belt	N/A	N/A	Att. B, Sec. III.C
B3-BC3	Belt Conveyor	1200 tph	Pre August 1971	Rex Chain Belt	N/A	N/A	Att. B, Sec. III.C
B3-BC4	Shuttle Conveyor	1200 tph	Pre August 1971	Rex Chain Belt	N/A	N/A	Att. B, Sec. III.C
B3-VS1	Vibrating Screen	1200 tph	2003 (like-kind replacement)	METSO	8X20 SD	26A818	Att. B, Sec. III.C
B2-DC1	Dust Collector	N/A	Pre August 1971	Mikropul	2G3-96	70-H-1931	Att. B, Sec. III.C
B3-DC1	Dust Collector	N/A	Pre August 1971	Mikropul	1F3-24	70-H-1934	Att. B, Sec. III.C

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
B2-VS1	Dual Deck Screen	300 tph	2022	JCI	SS8202-38LP-D	TBD	Att. B, Sec. III.E
B2-BC2	Belt Conveyor	300 tph	2023	Goodfellow	36" x 60'	TBD	Att. B, Sec. III.E
B2-BC3	Belt Conveyor	1,000 tph	2022	Goodfellow	ADT3660	C10469	Att. B, Sec. III.E
B2-BC4	Belt Conveyor	200tph	2023	Goodfellow	48" x 28'	TBD	Att. B, Sec. III.E
B2-BC5	Belt Conveyor	100 tph	2023	Goodfellow	36" x 30'	TBD	Att. B, Sec. III.E
B2-BC6	Belt Conveyor	100 tph	2023	Goodfellow	36" x 460'	TBD	Att. B, Sec. III.E
B2-BC7	Belt Conveyor	1,000 tph	2025	Goodfellow	MDC7245	C100109	Att. B, Sec. III.E
B2-BC8	Belt Conveyor	1,000 tph	2025	Goodfellow	MDT3685	C100110	Att. B, Sec. III.E
B2-TS1	Radial Stacker	100 tph	2023	Goodfellow	36" x100'	TBD	Att. B, Sec. III.E
B2-DC2	Dust Collector	4,000 cfm	2023	Camcorp	7TR10X49	TBD	Att. B, Sec. III.E
B2-DC3	Dust Collector	12,000 cfm	2023	Camcorp	13TR10X169	TBD	Att. B, Sec. III.E
B2-DC4	Dust Collector	3,000 cfm	2025	Donaldson	DLMV 30/15	IG18764041 L001	Att. B, Sec. III.E
Various enclosed screw conveyor devices							
II: Overland Conveyor System							
B5-BC1	Belt Conveyor	1200 tph	Pre August 1971	Rex Chain Belt	N/A	N/A	Att. B, Sec. III.C

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
B5-BC2	Belt Conveyor	1200 tph	Pre August 1971	Rex Chain Belt	N/A	N/A	Att. B, Sec. III.C
B5-BC3	Belt Conveyor	1200 tph	Pre August 1971	Rex Chain Belt	N/A	N/A	Att. B, Sec. III.C
B5-BC4	Belt Conveyor	1200 tph	Pre August 1971	Rex Chain Belt	N/A	N/A	Att. B, Sec. III.C
B5-VF1 through B5-VF12	Vibrating Feeders	1200 tph	Pre August 1971	Eriez Magnetics	95A	RD4-109 to RD4-120	Att. B, Sec. III.C
B5-DC1	Dust Collector	N/A	Pre August 1971	Mikropul	36S-8-30	70-H-1935	Att. B, Sec. III.C
B5-DC2	Dust Collector	N/A	Pre August 1971	Mikropul	36S-8-30	70-H-1936	Att. B, Sec. III.C
B5-DC3	Dust Collector	N/A	Pre August 1971	Mikropul	36S-8-30	71-H-390	Att. B, Sec. III.C
III: Stacker/Reclaimer and Storage Area							
B7-BC1	Belt Conveyor	1200 tph	Pre August 1971	Rex Chain Belt	N/A	N/A	Att. B, Sec. III.C
B7-BC2	Belt Conveyor	1200 tph	Pre August 1971	MIAG	N/A	N/A	Att. B, Sec. III.C
B7-BC3	Stacker Boom Conveyor	1200 tph	Pre August 1971	MIAG	N/A	N/A	Att. B, Sec. III.C
B7-TS	Stacker	1200 tph	Pre August 1971	MIAG	N/A	N/A	Att. B, Sec. III.C
B8-BC1	Belt Conveyor	450 tph	Pre August 1971	N/A	N/A	N/A	Att. B, Sec. III.C
B8-BC1A	Belt Conveyor	500 tph	Pre August 1971	N/A	N/A	N/A	Att. B, Sec. III.C
C2-BC4	Belt Conveyor	500 tph	Pre August 1971	Rex Chain Belt	N/A	N/A	Att. B, Sec. III.C

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
C2-TR1	Reclaimer	500 tph	Pre August 1971	MIAG	N/A	N/A	Att. B, Sec. III.C
B7-DC1	Dust Collector	N/A	Pre August 1971	Mikropul	80S-8-20	N/A	Att. B, Sec. III.C Att. B, Sec. III.E
B8-DC1	Dust Collector	N/A	Pre August 1971	Mikropul	80S-8-20	N/A	Att. B, Sec. III.C
B8-DC2	Dust Collector	N/A	Pre August 1971	Mikropul	80S-8-20	N/A	Att. B, Sec. III.C
IV: Roller Mill Feed Area							
C2-BC1	Belt Conveyor	460 tph	Pre August 1971	MIAG	N/A	N/A	Att. B, Sec. III.C
C2-BC2	Belt Conveyor	460 tph	Pre August 1971	MIAG	N/A	N/A	Att. B, Sec. III.C
C2-BC3	Belt Conveyor	460 tph	Pre August 1971	Rex Chain Belt	N/A	N/A	Att. B, Sec. III.C
C2-BC3-BF1	Belt Feeder	200 tph	Pre August 1971	N/A	N/A	N/A	Att. C, Sec. VII
C2-BC3-MGT-BC	Belt Conveyor	N/A	2009	Eriez Magnetics	N/A	N/A	Att. C, Sec. VII
C2-BC7	Belt Conveyor	460 tph	2000	Terra Nova	N/A	N/A	Att. C, Sec. VII
C2-BE3	Bucket Elevator	460 tph	Pre August 1971	MIAG	N/A	N/A	Att. C, Sec. VII
C2-BE4	Bucket Elevator	460 tph	Pre August 1971	MIAG	N/A	N/A	Att. C, Sec. VII
C2-DR1	Drag Rake	100 tph	Pre August 1971	MIAG	N/A	N/A	Att. C, Sec. VII
C2-DR2	Drag Rake	100 tph	Pre August 1971	MIAG	N/A	N/A	Att. C, Sec. VII
C2-SB7	Storage Bin	250 tons	2000	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
C2-SB8	Storage Bin	250 tons	2000	N/A	N/A	N/A	Att. C, Sec. VII
D4-BC1	Belt Conveyor	460 tph	2000	Terra Nova	N/A	N/A	Att. C, Sec. VII
D4-BE1	Bucket Elevator	100 tph	2000	Rexnord	2116M 34x64	250021	Att. C, Sec. VII
D4-BF1	Belt Feeder	100 tph	2000	N/A	N/A	N/A	Att. C, Sec. VII
D4-BS1	Belt Scale	460 tph	2000	Merrick	450	450-MC2-24295	Att. C, Sec. VII
D4-BS2	Belt Scale	460 tph	2000	Merrick	450	450-MC2-24296	Att. C, Sec. VII
D4-BS3	Belt Scale	460 tph	2009	Merrick	450	450-MC2-30310	Att. C, Sec. VII
D4-BS4	Belt Scale	460 tph	2000	Merrick	450	450-MC2-24298	Att. C, Sec. VII
D4-BS5	Belt Scale	460 tph	2000	Merrick	450	450-MC2-24299	Att. C, Sec. VII
D4-BS6	Belt Scale	460 tph	2006	Merrick	450	450-MC2-28245	Att. C, Sec. VII
D4-DR1	Drag Conveyor	100 tph	2000	Rexnord	N/A	N/A	Att. C, Sec. VII
D4-HOP	Hopper	50 tons	2000	N/A	N/A	N/A	Att. C, Sec. VII
D4-SB3	Additive Bin	150 tons	2000	N/A	N/A	N/A	Att. C, Sec. VII
D4-SB4	Additive Bin	150 tons	2000	N/A	N/A	N/A	Att. C, Sec. VII
D4-SB5	Additive Bin	150 tons	2000	N/A	N/A	N/A	Att. C, Sec. VII
D4-SB6	Additive Bin	150 tons	2000	N/A	N/A	N/A	Att. C, Sec. VII
D4-VB1	Bin Vibrator	460 tph	2000	Vibra Screw	10'0" BA	2002188	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
D4-VB2	Bin Vibrator	460 tph	2000	Vibra Screw	10'0" BA	2002189	Att. C, Sec. VII
D4-VB4	Bin Vibrator	100 tph	2000	Vibra Screw	8'0" BA	N/A	Att. C, Sec. VII
D4-VB5	Bin Vibrator	100 tph	2000	Vibra Screw	8'0" BA	N/A	Att. C, Sec. VII
C2-DC1	Dust Collector	N/A	1971	Mikropul	36S-8-30	71-H-1631	Att. B, Sec. III.C
C2-DC3	Dust Collector	N/A	2000	Amerex	RP-12-36-D6	N/A	Att. C, Sec. VII
D4-DC1	Dust Collector	N/A	2000	Amerex	RP-12-169-D6	N/A	Att. C, Sec. VII
D4-DC2	Dust Collector	N/A	2000	Amerex	RP-12-81-D6	N/A	Att. C, Sec. VII
V: Roller Mill							
D4-BE2	Bucket Elevator	460 tph	2000	Rexnord	1630-24108 34x64	250025	Att. C, Sec. VII
D4-CC1	Cyclone	460 tph	2000	Polysius	Sepol RMR 410	N/A	Att. C, Sec. VII
D4-CC2	Cyclone	460 tph	2000	Polysius	N/A	N/A	Att. C, Sec. VII
D4-CC3	Cyclone	460 tph	2000	Polysius	N/A	N/A	Att. C, Sec. VII
D4-CC4	Cyclone	460 tph	2000	Polysius	N/A	N/A	Att. C, Sec. VII
D4-RM1	Roller Mill	460 tph	2000	Polysius Quadropol	RMR 45/23	N/A	Att. C, Sec. VII
D4-SB1	Storage Bin	460 tph	2000	N/A	N/A	N/A	Att. C, Sec. VII
D4-SS1	Separator	460 tph	2000	Polysius	Sepol RMR 410	N/A	Att. C, Sec. VII
D4-VF1	Vibrating Feeder	460 tph	2000	Kenergy	Sepol RMR 410	KDF-6447	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
Various air slide devices							
Various enclosed screw conveyor devices							
VI: Homogenizing and Kiln Feed Silos							
F2-BE1	Bucket Elevator	300 tph	1971, 2002	Rexnord	N/A	N/A	Att. C, Sec. VII
F2-SB1	Homogenizing Silo	2400 tons	Post August 1971	Fuller	N/A	N/A	Att. C, Sec. VII
F2-SB2	Kiln Dust Bin	300 tons	2015	TBD	TBD	TBD	Att. C, Sec. VII
F2-BE2	Bucket Elevator	40 tph	2015	TBD	TBD	TBD	Att. C, Sec. VII
F2-PS-BE1	Bucket Elevator	100 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
F3-BE1	Bucket Elevator	250 tph	1971	Rex Chain Belt	N/A	N/A	Att. C, Sec. VII
F3-SB1	Kiln Feed Storage Silo	2600 tons	Post August 1971	N/A	N/A	N/A	Att. C, Sec. VII
F3-SB2	Kiln Feed Storage Silo	2600 tons	Post August 1971	N/A	N/A	N/A	Att. C, Sec. VII
F2-DC1	Dust Collector	N/A	2002	Amerex	N/A	N/A	Att. C, Sec. VII
F2-DC4	Dust Collector	N/A	1971	Mikropul	64S-8-20	71-H-391	Att. C, Sec. VII
F2-SB2-DC	Dust Collector	2700 cfm	2015	TBD	TBD	TBD	Att. C, Sec. VII
F3-DC1	Dust Collector	N/A	1971	Mikropul	36S-8-30	71-H-392	Att. C, Sec. VII
F3-DC2	Dust Collector	N/A	1971	Mikropul	36S-8-30	71-H-393	Att. C, Sec. VII
Various air slide devices							

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
Various enclosed screw conveyor devices							
VII: Raw Feed Materials to Rock Storage							
B9-BC1	Belt Conveyor	500 tph	1949	N/A	N/A	N/A	Att. B, Sec. III.C
B9-BC2	Belt Conveyor	500 tph	1949	N/A	N/A	N/A	Att. B, Sec. III.C
B9-BC3	Belt Conveyor	500 tph	1949	Stephens Adamson	5-S4	N/A	Att. B, Sec. III.C
B9-BC4	Belt Conveyor	500 tph	1949	N/A	N/A	N/A	Att. B, Sec. III.C
B9-BC4-BF	Belt Feeder	50 tph	2000	N/A	N/A	N/A	Att. B, Sec. III.C
B9-BC4-BFHOP	Hopper	50 tph	2000	N/A	N/A	N/A	Att. B, Sec. III.C
B9-BC6	Belt Conveyor	500 tph	N/A	N/A	N/A	N/A	Att. B, Sec. III.C
B9-IC	Impact Crusher	500 tph	1949	Pennsylvania Crusher	CF-15-50	1765	Att. B, Sec. III.C
B9-PF1	Pan Conveyor	500 tph	1949	N/A	N/A	N/A	Att. B, Sec. III.C
B9-VS1	Vibrating Screen	500 tph	2009 (like-kind replacement)	General Kinematics	FRC 72" X	C09904-01	Att. B, Sec. III.C
B9-VS2	Vibrating Screen	500 tph	1948	Hewitt Robbins	N/A	N/A	Att. B, Sec. III.C
Crusher Hopper	Hopper	500 tph	1949	N/A	N/A	N/A	Att. B, Sec. III.C
B9-DC1	Dust Collector	N/A	1971, 2001	Mikropul	N/A	N/A	Att. B, Sec. III.C
B9-DC2	Dust Collector	N/A	1985	Mikropul	80F3-10	855192H1	Att. B, Sec. III.C
B9-DC3	Dust Collector	N/A	1985	Mikropul	80F2-10	855193H1	Att. B, Sec. III.C
B9-DC5	Dust Collector	N/A	1985	Mikropul	36S-8-30	71-H-1622	Att. B, Sec. III.C

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
VIII: Raw Grinding - AC Area							
AC-BC1	Belt Conveyor	100 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
AC-BE1	Bucket Elevator	100 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
AC-BS1	Belt Scale	10 tph	1996	Merrick	450	450-MC2-22187	Att. C, Sec. VII
AC-BS2	Belt Scale	100 tph	1996	Merrick	450	450-MC2-22188	Att. C, Sec. VII
AC-BS3	Belt Scale	100 tph	1996	Merrick	450	450-MC2-22189	Att. C, Sec. VII
AC-BS4	Belt Scale	100 tph	1996	Merrick	450	450-MC2-22190	Att. C, Sec. VII
AC-DR1	Drag Conveyor	100 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
AC1 Mill	Mill	25 tph	1949	Allis Chalmers	N/A	N/A	Att. C, Sec. VII
AC1-BE1	Bucket Elevator	25 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
AC1-BS1	Belt Scale	25 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
AC1-SB	Feed Bin	30 tons	1949	N/A	N/A	N/A	Att. C, Sec. VII
AC1-SS	Separator	25 tph	1949	Sturtevant	N/A	N/A	Att. C, Sec. VII
AC2 Mill	Mill	25 tph	1949	Allis Chalmers	N/A	N/A	Att. C, Sec. VII
AC2-BE1	Bucket Elevator	25 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
AC2-BS1	Belt Scale	25 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
AC2-BS1-VF1	Vibrating Feeder	25 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
AC2-SB	Feed Bin	30 tons	1949	N/A	N/A	N/A	Att. C, Sec. VII
AC2-SS	Separator	25 tph	1949	Sturtevant	N/A	N/A	Att. C, Sec. VII
AC3 Mill	Mill	25 tph	1951	Allis Chalmers	N/A	N/A	Att. C, Sec. VII
AC3-BE1	Bucket Elevator	25 tph	1951	N/A	N/A	N/A	Att. C, Sec. VII
AC3-BS1	Belt Scale	25 tph	1951	Merrick	N/A	N/A	Att. C, Sec. VII
AC3-BS1-VF1	Vibrating Feeder	25 tph	1951	N/A	N/A	N/A	Att. C, Sec. VII
AC3-SB	Feed Bin	30 tons	1951	N/A	N/A	N/A	Att. C, Sec. VII
AC3-SS	Separator	25 tph	1951	Sturtevant	N/A	N/A	Att. C, Sec. VII
AC4 Mill	Mill	25 tph	1955	Allis Chalmers	N/A	N/A	Att. C, Sec. VII
AC4-BE1	Bucket Elevator	25 tph	1955	N/A	N/A	N/A	Att. C, Sec. VII
AC4-BS1	Belt Scale	25 tph	1997	Merrick	450	450-MC2-23019	Att. C, Sec. VII
AC4-SB	Feed Bin	18 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
AC4-SS	Separator	25 tph	1955	Sturtevant	N/A	N/A	Att. C, Sec. VII
AC-DC3	Dust Collector	N/A	1981	Mikropul	221S-8-20	82129	Att. C, Sec. VII
AC1-DC1	Dust Collector	N/A	1981	Mikropul	221S-10-20	7844H1	Att. C, Sec. VII
AC2-DC1	Dust Collector	N/A	1979	Mikropul	221S-10-20	78444H2	Att. C, Sec. VII
AC3-DC1	Dust Collector	N/A	1979	Mikropul	221S-10-20	78444H3	Att. C, Sec. VII
AC4-DC1	Dust Collector	N/A	1979	Mikropul	221S-10-20	78444H4	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
Various enclosed screw conveyor devices							
Various air slide devices							
IX: Proportioning Silos							
AC-A1	Alleviator	100 tph	2000	N/A	N/A	N/A	Att. C, Sec. VII
AC-BE2	Bucket Elevator	100 tph	1955	N/A	N/A	N/A	Att. C, Sec. VII
F2-POD	Pneumatic Conveyance System	125 tph	2000	MODCO	N/A	N/A	Att. C, Sec. VII
F2-PS-SB1	Storage Bin	280 tons	1949	N/A	N/A	N/A	Att. C, Sec. VII
F2-PS-SB2	Storage Bin	280 tons	1949	N/A	N/A	N/A	Att. C, Sec. VII
F2-PS-SB3	Storage Bin	280 tons	1949	N/A	N/A	N/A	Att. C, Sec. VII
F2-PS-SB4	Storage Bin	280 tons	1949	N/A	N/A	N/A	Att. C, Sec. VII
F2-PS-SB5	Storage Bin	280 tons	1949	N/A	N/A	N/A	Att. C, Sec. VII
F2-PS-SB6	Storage Bin	280 tons	1949	N/A	N/A	N/A	Att. C, Sec. VII
F2-PS-SB7	Storage Bin	280 tons	1951	N/A	N/A	N/A	Att. C, Sec. VII
F2-PS-SB8	Storage Bin	280 tons	1951	N/A	N/A	N/A	Att. C, Sec. VII
F2-PS-SB9	Storage Bin	280 tons	1951	N/A	N/A	N/A	Att. C, Sec. VII
F2-PS-SB10	Storage Bin	280 tons	1951	N/A	N/A	N/A	Att. C, Sec. VII
F2-PS-SB11	Storage Bin	280 tons	1951	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
F2-PS-SB12	Storage Bin	280 tons	1951	N/A	N/A	N/A	Att. C, Sec. VII
AC-BE2-DC	Dust Collector	N/A	2000	Mikropul	64S-8-20	76615H1	Att. C, Sec. VII
AC-DC1	Dust Collector	N/A	2000	N/A	N/A	N/A	Att. C, Sec. VII
F2-PS-DC1	Dust Collector	N/A	1980	Mikropul	10/8/1930	73-H-897	Att. C, Sec. VII
F2-PS-DC2	Dust Collector	N/A	1980	Mikropul	10/8/1930	N/A	Att. C, Sec. VII
F2-PS-DC3	Dust Collector	N/A	N/A	Mikropul	N/A	N/A	Att. C, Sec. VII
Various enclosed screw conveyor devices							
Various pneumatic conveying devices							
X: Kilns 1, 2, and 3 Feed Silos							
F3-KS-BE1	Bucket Elevator	100 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
F3-KS-SB	Storage Bin	15 tons	1992	N/A	N/A	N/A	Att. C, Sec. VII
F3-KS-SB1	Silo	575 tons	1949	N/A	N/A	N/A	Att. C, Sec. VII
F3-KS-SB2	Silo	575 tons	1949	N/A	N/A	N/A	Att. C, Sec. VII
F3-KS-SB3	Silo	575 tons	1949	N/A	N/A	N/A	Att. C, Sec. VII
F3-KS-SB4	Silo	575 tons	1951	N/A	N/A	N/A	Att. C, Sec. VII
F3-KS-SB5	Silo	575 tons	1951	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
F3-KS-SB6	Silo	575 tons	1951	N/A	N/A	N/A	Att. C, Sec. VII
F3-KS-SCF	Screw Feeder	100 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
F3-KS-DC1	Dust Collector	N/A	1974	Mikropul	25S-8-20B	N/A	Att. C, Sec. VII
Various enclosed screw conveyor devices							
XI: Kilns 1, 2, and 3							
H3-K1-K	Rotary Kiln	19 tph	1949	Allis Chalmers	N/A	N/A	Att. C, Sec. VI
H3-K2-K	Rotary Kiln	19 tph	1951	Allis Chalmers	N/A	N/A	Att. C, Sec. VI
H3-K3-K	Rotary Kiln	19 tph	1955	FL Smidth	N/A	N/A	Att. C, Sec. VI
H4-K1-DBE1	Bucket Elevator	30 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H4-K1-FBE1	Bucket Elevator	30 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H4-K2-DBE1	Bucket Elevator	30 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H4-K2-FBE1	Bucket Elevator	30 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H4-K3-DBE1	Bucket Elevator	56 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H4-K3-FBE1	Bucket Elevator	30 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H4-K1-CC	Cyclone	19 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H4-K2-CC	Cyclone	19 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H4-K3-CC	Cyclone	19 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
Kiln #1 Bin	Kiln Feed Bin	92 tons	1949	NA	N/A	N/A	Att. C, Sec. VII
Kiln #2 Bin	Kiln Feed Bin	92 tons	1951	NA	N/A	N/A	Att. C, Sec. VII
Kiln #3 Bin	Kiln Feed Bin	92 tons	1955	NA	N/A	N/A	Att. C, Sec. VII
H5-1-SCF	Screw Feeder	19 tph	1978	N/A	N/A	N/A	Att. C, Sec. VII
H5-2-SCF	Screw Feeder	19 tph	1978	N/A	N/A	N/A	Att. C, Sec. VII
H5-3-SCF1	Screw Feeder	19 tph	1978	N/A	N/A	N/A	Att. C, Sec. VII
H5-5 Dust Bin	Dust Bin	100 tons	1971	N/A	N/A	N/A	Att. C, Sec. VII
H5-5-FP1	Fuller Kinyon Dust Pump	30 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H5-5-GB-BE1	Bucket Elevator	56 tph	1978	Rexnord	N/A	N/A	Att. C, Sec. VII
H5-5-SCF1	Screw Feeder	19 tph	1978	N/A	N/A	N/A	Att. C, Sec. VII
H4-K1-DC	Dust Collector	N/A	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H4-K2-DC	Dust Collector	N/A	1974	Mikropul	25S-8-20B	73-H-901	Att. C, Sec. VII
H4-K3-DC	Dust Collector	N/A	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H5-5-DC1	Dust Collector	N/A	1978	Mikropul	36S-8-30	N/A	Att. C, Sec. VII
H5-5-DC2	Dust Collector	N/A	1978	Mikropul	36S-8-30	N/A	Att. C, Sec. VII
H5-5-GB	Dust Collector	N/A	1978	ICA	5535 S12	N/A	Att. C, Sec. VI
Various enclosed screw conveyor devices							
Various air slide devices							

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
Various pneumatic conveying devices							
XII. Clinker Coolers 1, 2, and 3							
H2-KB1	Belt Conveyor	56 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H2-KB4	Belt Conveyor	19 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H2-K1-BE1	Bucket Elevator	19 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
H2-K2-BE1	Bucket Elevator	19 tph	1955	N/A	N/A	N/A	Att. C, Sec. VII
H2-K3-BE1	Bucket Elevator	19 tph	1955	N/A	N/A	N/A	Att. C, Sec. VII
H2-QC1	Clinker Cooler	19 tph	1949	Fuller	N/A	N/A	Att. C, Sec. VI
H2-QC1-DR1	Drag Conveyor	19 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H2-QC2	Clinker Cooler	19 tph	1951	Fuller	N/A	N/A	Att. C, Sec. VI
H2-QC2-DR1	Drag Conveyor	19 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H2-QC3	Clinker Cooler	19 tph	1955	Fuller	N/A	N/A	Att. C, Sec. VI
H2-QC3-DR1	Drag Conveyor	19 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H2-3-DC-BE	Bucket Elevator	N/A	1974	N/A	N/A	N/A	Att. C, Sec. VII
H2-KB1-DC	Dust Collector	N/A	1981	N/A	N/A	N/A	Att. C, Sec. VII
H2-KB3-DC	Dust Collector	N/A	1982	WH/FRYE	N/A	N/A	Att. C, Sec. VII
H2-1-DC	Dust Collector	N/A	1974	WH/FRYE	108	N/A	Att. C, Sec. VI
H2-2-DC	Dust Collector	N/A	1974	WH/FRYE	108	N/A	Att. C, Sec. VI

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
H2-3-DC	Dust Collector	N/A	1974	WH/FRYE	108	N/A	Att. C, Sec. VI
Various enclosed screw conveyor devices							
XIII: Preheater and Kiln 4							
H3-K4-BC1	Belt Conveyor	N/A	1989	N/A	N/A	N/A	Att. C, Sec. VII
H3-K4-BE1	Bucket Elevator	207 tph	1989	N/A	N/A	N/A	Att. C, Sec. VII
H3-K4-HOP	Hopper	25 tph	2025	Samson	800-6-SD	51656	Att. C, Sec. VII
H3-K4-K	Rotary Kiln	207 tph	1971	Allis Chalmers	N/A	N/A	Att. C, Sec. VI
H3-K4-BF1	Belt Feeder	25 tph	2025	Samson	800-6-SD	51656	Att. C, Sec. VII
H3-K4-WF1	Fuel Feeder	10 tph	N/A	Pfister	N/A	N/A	Att. C, Sec. VII
H3-K4-WF1-SB	Storage Bin	10 tons	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H3-K4-WF2	Fuel Feeder	10 tph	N/A	Pfister	N/A	N/A	Att. C, Sec. VII
H3-K4-WF2-SB	Storage Bin	10 tons	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H4-FB1~~eed Bin~~	Kiln 4 Raw Mix Bin	15 tons	1971	N/A	N/A	N/A	Att. C, Sec. VII
H4-BS	Weighbelt Feeder	300 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
H4-BE1	Bucket Elevator	460 tph	1971	Rex Chain Belt	N/A	N/A	Att. C, Sec. VII
H4-BE2	Bucket Elevator	460 tph	1971	Rex Chain Belt	N/A	N/A	Att. C, Sec. VII
H4-CC1A	Cyclone	150 tph	1992	N/A	N/A	N/A	Att. C, Sec. VII
H4-CC1B	Cyclone	150 tph	1971, 1992	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
H4-CC2A	Cyclone	150 tph	1971, 1992	N/A	N/A	N/A	Att. C, Sec. VII
H4-CC2B	Cyclone	150 tph	1971, 1992	N/A	N/A	N/A	Att. C, Sec. VII
H4-CC3A	Cyclone	150 tph	1971, 1992	N/A	N/A	N/A	Att. C, Sec. VII
H4-CC3B	Cyclone	150 tph	1971, 1992	N/A	N/A	N/A	Att. C, Sec. VII
H4-CC4A	Cyclone	150 tph	1971, 1992	N/A	N/A	N/A	Att. C, Sec. VII
H4-RF2	Rotary Airlock	150 tph	1971	N/A	N/A	N/A	Att. C, Sec. VII
H4-RF3	Rotary Airlock	150 tph	1971	N/A	N/A	N/A	Att. C, Sec. VII
H4-SB-KS	Raw Mix Bin	25 tons	1971	N/A	N/A	N/A	Att. C, Sec. VII
H5 Dust Bin	Dust Bin	100 tons	1971	N/A	N/A	N/A	Att. C, Sec. VII
H5-BE1	Bucket Elevator	75 tph	1971	N/A	N/A	N/A	Att. C, Sec. VII
H5-FP1	Fuller Kinyon Pump	27 tph	1971	N/A	N/A	N/A	Att. C, Sec. VII
H5-FP2	Fuller Kinyon Pump	27 tph	1989	N/A	N/A	N/A	Att. C, Sec. VII
Preheater	Preheater	207 tph	1971	Allis Chalmers	N/A	N/A	Att. C, Sec. VII
Preheater	Calciner	207 tph	1985	Allis Chalmers	N/A	N/A	Att. C, Sec. VII
H3-K4-DC1	Dust Collector	N/A	1990	Mikropul	N/A	N/A	Att. C, Sec. III.D
H3-K4-DC2	Dust Collector	N/A	1990	Mikropul	N/A	N/A	Att. C, Sec. III.D
H4-DC1	Dust Collector	N/A	1971	Mikropul	25S-8-30B	79318	Att. C, Sec. VII
H5-DC1	Dust Collector	1300 cfm	2010	DCL	VMV-375	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
H5-GB	Dust Collector	N/A	1972	Western Precipitation	CHP-SP-N	N/A	Att. C, Sec. VI
~~H5~~H7-~~SNC~~UR	SNCR System	10 gpm	2018	N/A	N/A	N/A	Att. C, Sec. VI
H7-LJ-SB1	Lime Bin	35 tons	2020	NOL-TEC	N/A	N/A	Att. C, Sec. X
H7-LJ-SB1-DC	Lime Bin Vent	N/A	2020	NOL-TEC	238	N/A	Att. C, Sec. X
H7-LJ	Lime Injection System	700 lb/hr	2020	NOL-TEC	N/A	N/A	Att. C, Sec. VI
TBD	Dust Collector	5,000 acfm	TBD	TBD	TBD	TBD	Att. C, Sec. VII
TBD	Dust Collector	5,000 acfm	TBD	TBD	TBD	TBD	Att. C, Sec. VII
TBD	Dust Collector	5,000 acfm	TBD	TBD	TBD	TBD	Att. C, Sec. VII
TBD	Dust Collector	5,000 acfm	TBD	TBD	TBD	TBD	Att. C, Sec. VII
TBD	Dust Collector	5,000 acfm	TBD	TBD	TBD	TBD	Att. C, Sec. VII
TBD	Belt Conveyor	TBD	TBD	TBD	TBD	TBD	Att. C, Sec. VII
TBD	Belt Conveyor	TBD	TBD	TBD	TBD	TBD	Att. C, Sec. VII
TBD	Load Cell Hopper	TBD	TBD	TBD	TBD	TBD	Att. C, Sec. VII
TBD	Belt Conveyor	TBD	TBD	TBD	TBD	TBD	Att. C, Sec. VII
TBD	Drum Magnet	TBD	TBD	TBD	TBD	TBD	Att. C, Sec. VII
Various enclosed screw conveyor devices							

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
XIV: Clinker Cooler 4							
H2-BE1	Bucket Elevator	207 tph	2003	N/A	N/A	N/A	Att. C, Sec. VII
H2-DR1	Drag Conveyor	207 tph	1971	N/A	N/A	N/A	Att. C, Sec. VII
H2-PF1	Pan Feeder	207 tph	2000	Rexnord	N/A	N/A	Att. C, Sec. VII
H2-PF2	Pan Feeder	207 tph	2026	TBD	TBD	TBD	Att. C, Sec. VII
TBD	Hopper	15 tph	TBD	TBD	TBD	TBD	Att. C, Sec VII
H2-BC2	Belt Conveyor	TBD	TBD	TBD	TBD	TBD	Att. C, Sec VII
H2-BC3	Belt Conveyor	207 tph	TBD	TBD	TBD	TBD	Att. C, Sec VII
H2-QC4	Clinker Cooler	207 tph	1971/2016*	Fuller/ FLSmidth	306X343	N/A	Att. C, Sec. VI
H2-SB1	Storage Bin	100 tons	2003	N/A	N/A	N/A	Att. C, Sec. VII
H2-DC1	Dust Collector	5,000 acfm	TBD	TBD	TBD	TBD	Att. C, Sec. VII
H2-DC2	Dust Collector	7,500 acfm	TBD	TBD	TBD	TBD	Att. C, Sec. VII
H2-DC3	Dust Collector	N/A	2003	Amerex	RP-12-9-D6	N/A	Att. C, Sec. VII
H2-DC4	Dust Collector	1,800 acfm	TBD	TBD	TBD	TBD	Att. C, Sec. VII
H2-DC5	Dust Collector	N/A	TBD	TBD	TBD	TBD	Att. C, Sec. VII
H2-GB	Dust Collector	N/A	1972	Wheelabrator	126	A-125748	Att. C, Sec. VI
Various enclosed screw conveyor devices							
*Clinker Cooler H2-QC4 rebuilt in 2016							
XV: Clinker/Gypsum Transport and Finish Mill Feed Bins							
C2-BC5	Belt Conveyor	155 tph	1971	Rex Chain Belt	N/A	N/A	Att. C, Sec. VII

C2-BC6	Belt Conveyor	155 tph	1977	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
C2-BC6A	Belt Conveyor	155 tph	1977	N/A	N/A	N/A	Att. C, Sec. VII
C2-BC8	Belt Conveyor	155 tph	1971	Rex Chain Belt	N/A	N/A	Att. C, Sec. VII
C2-BC9	Belt Conveyor	155 tph	1971	Rex Chain Belt	N/A	N/A	Att. C, Sec. VII
C2-BC10	Belt Conveyor	155 tph	1971	Rex Chain Belt	N/A	N/A	Att. C, Sec. VII
C2-BC11	Belt Conveyor	155 tph	1977	N/A	N/A	N/A	Att. C, Sec. VII
C2-BC11A	Belt Conveyor	155 tph	1977	N/A	N/A	N/A	Att. C, Sec. VII
C2-SB1	Storage Bin	360 tons	1971	N/A	N/A	N/A	Att. C, Sec. VII
C2-SB2	Storage Bin	360 tons	1971	N/A	N/A	N/A	Att. C, Sec. VII
C2-SB3	Storage Bin	360 tons	1971	N/A	N/A	N/A	Att. C, Sec. VII
C2-SB4	Storage Bin	360 tons	1971	N/A	N/A	N/A	Att. C, Sec. VII
C2-SB5	Storage Bin	360 tons	1971	N/A	N/A	N/A	Att. C, Sec. VII
C2-SB6	Storage Bin	360 tons	1971	N/A	N/A	N/A	Att. C, Sec. VII
C2-VF1	Vibrating Feeder	155 tph	1971	N/A	N/A	N/A	Att. C, Sec. VII
D2-BC1	Belt Conveyor	155 tph	1971	Rex Chain Belt	N/A	N/A	Att. C, Sec. VII
D2-BC2	Belt Conveyor	155 tph	2001	Rex Chain Belt	N/A	N/A	Att. C, Sec. VII
D2-BC6	Belt Conveyor	155 tph	2001	Rex Chain Belt	N/A	N/A	Att. C, Sec. VII
D2-BS1	Belt Scale	155 tph	1971	Merrick	430	WLL9699	Att. C, Sec. VII
D2-BS2	Belt Scale	155 tph	1971	Merrick	430	WLL9696	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
D2-BS3	Belt Scale	155 tph	1971	Merrick	430	WLL9701	Att. C, Sec. VII
D2-BS4	Belt Scale	155 tph	1971	Merrick	430	WLL9698	Att. C, Sec. VII
D2-BS5	Belt Scale	155 tph	1971	Merrick	430	WLL9700	Att. C, Sec. VII
D2-BS6	Belt Scale	155 tph	1971	Merrick	430	WLL9697	Att. C, Sec. VII
C2-DC2	Dust Collector	N/A	1971	Mikropul	36S-8-30	71-H-632	Att. C, Sec. VII
C2-DC4	Dust Collector	N/A	1971	Mikropul	36S-8-30	71-H-1622	Att. C, Sec. VII
C2-DC5	Dust Collector	N/A	1971	Mikropul	25S-8-30	71-H-394	Att. C, Sec. VII
C2-DC6	Dust Collector	N/A	1971	Mikropul	25S-8-30	71-H-395	Att. C, Sec. VII
C2-DC7	Dust Collector	N/A	1971	Mikropul	25S-8-30	71-H-396	Att. C, Sec. VII
C2-DC8	Dust Collector	N/A	1971	Mikropul	25S-8-30	71-H-397	Att. C, Sec. VII
C2-DC9	Dust Collector	N/A	1971	Mikropul	25S-8-30	71-H-398	Att. C, Sec. VII
C2-DC10	Dust Collector	N/A	1971	Mikropul	25S-8-30	71-H-399	Att. C, Sec. VII
C2-DC11	Dust Collector	N/A	1971	Mikropul	36S-8-30	71-H-633	Att. C, Sec. VII
C2-DC12	Dust Collector	N/A	1986	Mikropul	25S-10-30	870085H1	Att. C, Sec. VII
C2-DC13	Dust Collector	N/A	1986	Mikropul	25S-10-30	870085H2	Att. C, Sec. VII
D2-DC1	Dust Collector	N/A	1971	Mikropul	1F2	71-H-816	Att. C, Sec. VII
D2-DC3	Dust Collector	N/A	1971	Mikropul	36S-8-30	71-H-822	Att. C, Sec. VII
D2-DC5	Dust Collector	1433 cfm	2011	Donaldson	CPV-4	3219532-1	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
D2-DC6	Dust Collector	1433 cfm	2011	Donaldson	CPV-4	3219532-2	Att. C, Sec. VI
D2-DC7	Dust Collector	1433 cfm	2011	Donaldson	CPV-4	3219532-3	Att. C, Sec. VI
Various enclosed screw conveyor devices							
XVI: Finish Milling - CM Area							
CM-BC1	Belt Conveyor	100 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
CM-BE1	Bucket Elevator	60 tph	1969	N/A	N/A	N/A	Att. C, Sec. VII
CM-BE4	Bucket Elevator	60 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
CM-BS1	Belt Scale	100 tph	1996	Merrick	450	450-MC2-22296	Att. C, Sec. VII
CM-BS2	Belt Scale	15 tph	1996	Merrick	450	450-MC2-22295	Att. C, Sec. VII
CM-BS3	Belt Scale	15 tph	2004	N/A	N/A	N/A	Att. C, Sec. VII
CM-DR	Drag Conveyor	60 tph	1996	Kase	N/A	D-96H40-01	Att. C, Sec. VII
CM-DR1	Drag Conveyor	60 tph	1959	N/A	N/A	N/A	Att. C, Sec. VII
CM-DR2	Drag Conveyor	60 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
CM-FP1	Pneumatic Conveyor	20 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
CM-FP2	Pneumatic Conveyor	35 tph	1955	N/A	N/A	N/A	Att. C, Sec. VII
CM-FP3	Pneumatic Conveyor	69 tph	1969	Fuller	200M, 110	200-M-98-10235	Att. C, Sec. VII
CM-MA-BIN1	Storage Silo	100 tons	1970	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
CM-MA-BIN2	Storage Silo	100 tons	1970	N/A	N/A	N/A	Att. C, Sec. VII
CM-MA-BIN3	Storage Silo	230 tons	1970	N/A	N/A	N/A	Att. C, Sec. VII
CM-MA-SCF1	Screw Feeder	69 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
CM-MA-SCF2	Screw Feeder	69 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
CM-MA-SCF3	Screw Feeder	69 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
CM1-BE1	Bucket Elevator	10 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
CM1-BS1	Belt Scale	10 tph	1998	Merrick	450	450-MC2-23473	Att. C, Sec. VII
CM1-BS1-VF1	Vibrating Feeder	10 tph	1951	N/A	N/A	N/A	Att. C, Sec. VII
CM1-M	Mill	10 tph	1949	Allis Chalmers	N/A	N/A	Att. C, Sec. VII
CM1-SB	Storage Bin	N/A	1949	N/A	N/A	N/A	Att. C, Sec. VII
CM1-SS	Separator	10 tph	1949	Sturtevant	N/A	N/A	Att. C, Sec. VII
CM2-BE1	Bucket Elevator	10 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
CM2-BS1	Belt Scale	10 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
CM2-BS1-VF1	Vibrating Feeder	10 tph	1949	N/A	N/A	N/A	Att. C, Sec. VII
CM2-M	Mill	10 tph	1949	Allis Chalmers	N/A	N/A	Att. C, Sec. VII
CM2-SB	Storage Bin	N/A	1949	N/A	N/A	N/A	Att. C, Sec. VII
CM2-SS	Separator	10 tph	1949	Sturtevant	N/A	N/A	Att. C, Sec. VII
CM3-BE1	Bucket Elevator	10 tph	1951	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
CM3-BS1	Belt Scale	10 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
CM3-BS1-VF1	Vibrating Feeder	10 tph	1951	N/A	N/A	N/A	Att. C, Sec. VII
CM3-M	Mill	10 tph	1951	Allis Chalmers	N/A	N/A	Att. C, Sec. VII
CM3-SB	Storage Bin	N/A	1951	N/A	N/A	N/A	Att. C, Sec. VII
CM3-SS	Separator	10 tph	1951	Sturtevant	N/A	N/A	Att. C, Sec. VII
CM4-BE1	Bucket Elevator	10 tph	1955	N/A	N/A	N/A	Att. C, Sec. VII
CM4-BS1	Belt Scale	10 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
CM4-BS1-VF1	Vibrating Feeder	10 tph	1955	N/A	N/A	N/A	Att. C, Sec. VII
CM4-M	Mill	10 tph	1955	Allis Chalmers	N/A	N/A	Att. C, Sec. VII
CM4-SB	Storage Bin	N/A	1955	N/A	N/A	N/A	Att. C, Sec. VII
CM4-SS	Separator	10 tph	1955	Sturtevant	N/A	N/A	Att. C, Sec. VII
CM5-BE1	Bucket Elevator	10 tph	1955	N/A	N/A	N/A	Att. C, Sec. VII
CM5-BS1	Belt Scale	10 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
CM5-BS1-VF1	Vibrating Feeder	10 tph	1955	N/A	N/A	N/A	Att. C, Sec. VII
CM5-M	Mill	10 tph	1955	Allis Chalmers	N/A	N/A	Att. C, Sec. VII
CM5-SB	Storage Bin	N/A	1955	N/A	N/A	N/A	Att. C, Sec. VII
CM5-SS	Separator	10 tph	1955	Sturtevant	N/A	N/A	Att. C, Sec. VII
CM6-BE1	Bucket Elevator	10 tph	1956	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
CM6-BS1	Belt Scale	10 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
CM6-M	Mill	10 tph	1960	Allis Chalmers	N/A	N/A	Att. C, Sec. VII
CM6-SB	Storage Bin	N/A	1960	N/A	N/A	N/A	Att. C, Sec. VII
CM6-SS	Separator	10 tph	1960	Sturtevant	N/A	N/A	Att. C, Sec. VII
CM6-BS1-VF1	Vibrating Feeder	10 tph	1960	N/A	N/A	N/A	Att. C, Sec. VII
CM7-BC1	Belt Conveyor	69 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
CM7-BE1	Bucket Elevator	69 tph	1969	Rexnord	N/A	N/A	Att. C, Sec. VII
CM7-BE2	Bucket Elevator	69 tph	1998	Rexnord	2120M-01	G33315	Att. C, Sec. VII
CM7-BS1	Belt Scale	69 tph	2003	N/A	N/A	N/A	Att. C, Sec. VII
CM7-BS1-VF1	Vibrating Feeder	69 tph	1969	N/A	N/A	N/A	Att. C, Sec. VII
CM7-BS2	Belt Scale	69 tph	2009	Merrick	465	465-MC3-30848	Att. C, Sec. VII
CM7-BS3	Belt Scale	69 tph	1998	Merrick	465	465-MC3-30849	Att. C, Sec. VII
CM7-CX	Mill Cooler	69 tph	1969	Fuller	N/A	N/A	Att. C, Sec. VII
CM7-M	Mill	69 tph	1969	Fuller	N/A	B11915	Att. C, Sec. VII
CM7-RP1	Roll Crusher	69 tph	1969	N/A	N/A	N/A	Att. C, Sec. VII
CM7-RP2	Roll Crusher	69 tph	1969	N/A	N/A	N/A	Att. C, Sec. VII
CM7-SS	Separator	69 tph	1997	Polysius	185/0	N/A	Att. C, Sec. VII
CM7 Clinker Bin	Storage Bin	N/A	1969	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
CM7 Gypsum Bin	Storage Bin	N/A	1969	N/A	N/A	N/A	Att. C, Sec. VII
CM7 Limestone Bin	Storage Bin	N/A	1983	N/A	N/A	N/A	Att. C, Sec. VII
CM1-DC1	Dust Collector	N/A	1979	Mikropul	221S-10-TR	79287	Att. C, Sec. VII
CM2-DC1	Dust Collector	N/A	1979	Mikropul	221S-10-TR	72289	Att. C, Sec. VII
CM3-DC1	Dust Collector	N/A	1979	Mikropul	221S-10-TR	80295	Att. C, Sec. VII
CM4-DC1	Dust Collector	N/A	1979	Mikropul	221S-10-TR	79288	Att. C, Sec. VII
CM5-DC1	Dust Collector	N/A	1980	Mikropul	221S-10-TR	80296	Att. C, Sec. VII
CM6-DC1	Dust Collector	N/A	1979	Mikropul	221S-10-TR	79290	Att. C, Sec. VII
CM7-DC1	Dust Collector	N/A	1997	Amerex	RP-12-240, D6	1597-100	Att. C, Sec. VII
CM7-DC2	Dust Collector	N/A	1999	Amerex	RP-12-90	1597	Att. C, Sec. VII
CM7-DC3	Product Collector	N/A	1997	Amerex	RP-12-675, D6	1597-102	Att. C, Sec. VII
CM-DC4	Dust Collector	N/A	1982	Mikropul	221S-8-20	82127H1	Att. C, Sec. VII
CM-DC5	Dust Collector	N/A	1979	Mikropul	512K8	78416	Att. C, Sec. VII
CM-MA-DC1	Dust Collector	N/A	1970	Mikropul	16S-8-30	270-H-250	Att. C, Sec. VII
Various enclosed screw conveyor devices							
Various airslide devices							

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
Various pneumatic conveying devices							
XVII: Finish Milling - D2 Area							
D2-FP1	Pneumatic Pump	155 tph	2001	Fuller	N/A	N/A	Att. C, Sec. VII
D2-1-BC1	Belt Conveyor	155 tph	1971	Rex Chain Belt	N/A	N/A	Att. C, Sec. VII
D2-1-BE3	Bucket Elevator	155 tph	1971	Rex Chain Belt	N/A	N/A	Att. C, Sec. VII
D2-1-BE4	Bucket Elevator	155 tph	1971	Rex Chain Belt	N/A	N/A	Att. C, Sec. VII
D2-1-M	Mill	155 tph	1971	Allis Chalmers	N/A	B-16786	Att. C, Sec. VII
D2-1-SS	Separator	155 tph	2001	Polysius	Sepol 290	N/A	Att. C, Sec. VII
D2-PC	Product Collector	N/A	2001	N/A	N/A	N/A	Att. C, Sec. VII
D2-DC4	Dust Collector	N/A	2001	N/A	N/A	N/A	Att. C, Sec. VII
D2-1-DC1	Dust Collector	N/A	1975	Mikropul	283-96	71-H-612	Att. C, Sec. VII
Various airslide devices							
XVIII: Finish Milling - D3 Area							
D3-1-AS5B-MT	Material Trap	150 tph	1998	Polysius	N/A	N/A	Att. C, Sec. VII
D3-1-BC1	Belt Conveyor	150 tph	1987	FEECO	N/A	N/A	Att. C, Sec. VII
D3-1-BC2	Belt Conveyor	150 tph	1992	FEECO	N/A	N/A	Att. C, Sec. VII
D3-1-BC3	Belt Conveyor	150 tph	1992	FEECO	N/A	N/A	Att. C, Sec. VII
D3-1-BC4	Belt Conveyor	150 tph	1992	FEECO	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
D3-1-BC5	Belt Feeder	15 tph	2004	Schenck	N/A	N/A	Att. C, Sec. VII
D3-1-BC5-HOP	Hopper	150 tons	2004	N/A	N/A	N/A	Att. C, Sec. VII
D3-1-BE1	Bucket Elevator	450 tph	1987	Rexnord	N/A	N/A	Att. C, Sec. VII
D3-1-BE2	Bucket Elevator	150 tph	1974	Rexnord	N/A	N/A	Att. C, Sec. VII
D3-1-BE3	Bucket Elevator	150 tph	1974	Rexnord	N/A	N/A	Att. C, Sec. VII
D3-1-BE4	Bucket Elevator	150 tph	1974	Rexnord	N/A	N/A	Att. C, Sec. VII
D3-1-BE5	Bucket Elevator	150 tph	1987	Rexnord	N/A	N/A	Att. C, Sec. VII
D3-1-BS1	Belt Scale	150 tph	1988	Thayer	N/A	N/A	Att. C, Sec. VII
D3-1-BS2	Belt Scale	150 tph	1974	Merrick	N/A	N/A	Att. C, Sec. VII
D3-1-CX	Cement Cooler	150 tph	1974	Fuller	N/A	N/A	Att. C, Sec. VII
D3-1-FP1	Pneumatic Pump	150 tph	1987	Fuller	N/A	N/A	Att. C, Sec. VII
D3-1-HRP1	Roll Press	150 tph	1987	Polysius	N/A	450-4	Att. C, Sec. VII
D3-1-HRP2	Roll Press	150 tph	1987	Polysius	N/A	N/A	Att. C, Sec. VII
D3-1-M	Finish Mill	150 tph	1974	Allis Chalmers	N/A	B40131	Att. C, Sec. VII
D3-1-RS1	Rotary Screen	150 tph	2006	Vroom	N/A	N/A	Att. C, Sec. VII
D3-1-SB1	Storage Bin	150 tph	1974	N/A	N/A	N/A	Att. C, Sec. VII
D3-1-SB2	Storage Bin	150 tph	1974	N/A	N/A	N/A	Att. C, Sec. VII
D3-1-SS	Separator	150 tph	1999	Polysius	Sepol 290	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
D3-1-VB1	Variable Feeder	150 tph	2000	Kinergy	N/A	N/A	Att. C, Sec. VII
D3-1-DC1	Dust Collector	N/A	1974	Mikropul	2G3-96	72-H-2337	Att. C, Sec. VII
D3-1-DC2	Product Collector	N/A	1987	Mikropul	720J-10-20-TR	860520H1-H2	Att. C, Sec. VII
D3-1-DC3	Dust Collector	N/A	1987	Mikropul	289S-10-20-TR	860520H3	Att. C, Sec. VII
Various enclosed screw conveyor devices							
Various air slide devices.							
Various pneumatic conveying devices.							
XIX: Product Storage and Bulk Loadout							
BL-BE1	Bucket Elevator	450 tph	1960	N/A	N/A	N/A	Att. C, Sec. VII
BL-BE2	Bucket Elevator	450 tph	1960	N/A	N/A	N/A	Att. C, Sec. VII
BL-BE3	Bucket Elevator	450 tph	1998	Rexnord	1636	1636-2613G	Att. C, Sec. VII
BL-RS1	Rotary Screen	276 tph	1960	N/A	N/A	N/A	Att. C, Sec. VII
BL-RS2	Rotary Screen	276 tph	1960	N/A	N/A	N/A	Att. C, Sec. VII
BL-RS3	Rotary Screen	276 tph	1997	N/A	N/A	N/A	Att. C, Sec. VII
BL-SB1	Storage Bin	150 tons	1960	N/A	N/A	N/A	Att. C, Sec. VII
BL-SB2	Storage Bin	150 tons	1960	N/A	N/A	N/A	Att. C, Sec. VII
BL-SB3	Storage Bin	150 tons	1960	N/A	N/A	N/A	Att. C, Sec. VII
BL-SB4	Storage Bin	150 tons	1960	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
BL-SB5	Storage Bin	850 tons	1960	N/A	N/A	N/A	Att. C, Sec. VII
BL-SB6	Storage Bin	100 tons	1960	N/A	N/A	N/A	Att. C, Sec. VII
CM-A1	Alleviator	276 tph	1970	N/A	N/A	N/A	Att. C, Sec. VII
CM-A2	Alleviator	276 tph	1971	N/A	N/A	N/A	Att. C, Sec. VII
CM-A3	Alleviator	276 tph	1971	N/A	N/A	N/A	Att. C, Sec. VII
CM-A4	Alleviator	276 tph	1971	N/A	N/A	N/A	Att. C, Sec. VII
CM-A5	Alleviator	276 tph	1971	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB1	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB2	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB3	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB4	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB5	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB6	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB7	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB8	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB9	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB10	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB11	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
CS-SB12	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB13	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB14	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB15	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB16	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB17	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB18	Storage Silo	3100 tons	1955	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB19	Storage Silo	3100 tons	1960	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB20	Storage Silo	3100 tons	1960	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB21	Storage Silo	3100 tons	1960	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB22	Storage Silo	3100 tons	1960	N/A	N/A	N/A	Att. C, Sec. VII
CS-SB23	Storage Silo	3100 tons	1960	N/A	N/A	N/A	Att. C, Sec. VII
BL-DC1	Dust Collector	N/A	1984	Mikropul	49S-8-20	845034H1	Att. C, Sec. VII
BL-DC2	Dust Collector	N/A	1984	Mikropul	49S-8-20	845038H1	Att. C, Sec. VII
BL-DC3	Dust Collector	N/A	1984	Mikropul	100S-8-20	845060H1	Att. C, Sec. VII
BL-DC4	Dust Collector	N/A	1984	Mikropul	100S-8-20	845060H2	Att. C, Sec. VII
BL-DC5	Dust Collector	N/A	2001	Mikropul	49-S-10-20-TR	201087-H1	Att. C, Sec. VII
BL-DC6	Dust Collector	N/A	1986	Mikropul	100S-8-20	860058	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
BL-DC7	Dust Collector	N/A	1984	Mikropul	49S-10-20B	79545H1	Att. C, Sec. VII
BL-SB5-DC1	Dust Collector	N/A	1974	Mikropul	36S-8-30	N/A	Att. C, Sec. VII
BL-SB5-DC2	Dust Collector	N/A	1980	Mikropul	25S-8-30	79261H	Att. C, Sec. VII
BL-SB5-DC3	Dust Collector	N/A	1980	Mikropul	25S-8-30	79318H1	Att. C, Sec. VII
CM-DC8	Dust Collector	N/A	1980	Mikropul	144S-6-20	76583H1	Att. C, Sec. VII
CM-DC9	Dust Collector	N/A	1973	Mikropul	130S-8-20	71-H-1179	Att. C, Sec. VII
CM-DC10	Dust Collector	N/A	1973	Mikropul	130S-8-20	71-H-1178	Att. C, Sec. VII
CM-DC11	Dust Collector	N/A	1973	Mikropul	130S-8-20	71-H-1180	Att. C, Sec. VII
CM-DC12	Dust Collector	N/A	1973	Mikropul	130S-8-20	71-H-1981	Att. C, Sec. VII
CM-DC14	Dust Collector	N/A	1987	Fuller	196C10	N/A	Att. C, Sec. VII
CM-DC15	Dust Collector	N/A	1987	Fuller	196C10	N/A	Att. C, Sec. VII
CM-DC16	Dust Collector	N/A	1987	Fuller	196C10	N/A	Att. C, Sec. VII
CM-DC17	Dust Collector	N/A	2001	Fuller	N/A	N/A	Att. C, Sec. VII
Various enclosed screw conveyor devices							
Various air slide devices							
XX: Cement Packhouse							
PH-BC2	Belt Conveyor	276 tph	1950	N/A	N/A	N/A	Att. C, Sec. VII
PH-BE1	Bucket Elevator	276 tph	1948	N/A	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
PH-BE2	Bucket Elevator	276 tph	1952	N/A	N/A	N/A	Att. C, Sec. VII
PH-FP1	Pneumatic Conveyor	276 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
PH-PK3	Cement Packer	276 tph	2003	Mollers	N/A	N/A	Att. C, Sec. VII
PH-PK4	Cement Packer	276 tph	1950	St. Regis	N/A	N/A	Att. C, Sec. VII
PH-PZ2	Palletizer	N/A	1999	Mollers	N/A	N/A	Att. C, Sec. VII
PH-PZ3	Palletizer	N/A	1999	St. Regis	N/A	N/A	Att. C, Sec. VII
PH-RS1	Rotary Screen	276 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
PH-RS2	Rotary Screen	276 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
PH-SB1	Storage Bin	N/A	N/A	N/A	N/A	N/A	Att. C, Sec. VII
PH-SB2	Storage Bin	N/A	N/A	N/A	N/A	N/A	Att. C, Sec. VII
PH-PK3-BC1	Belt Conveyor	276 tph	N/A	N/A	N/A	N/A	Att. C, Sec. VII
PH-PK3-BC2	Belt Conveyor	276 tph	1950	N/A	N/A	N/A	Att. C, Sec. VII
PH-PK3-BC4	Belt Conveyor	276 tph	1950	N/A	N/A	N/A	Att. C, Sec. VII
PH-PK3-BC5	Belt Conveyor	276 tph	1950	N/A	N/A	N/A	Att. C, Sec. VII
PH-PK3-SE1A	Stack Elevator	276 tph	1950	St. Regis	N/A	N/A	Att. C, Sec. VII
PH-PK3-SE1B	Stack Elevator	276 tph	1950	St. Regis	N/A	N/A	Att. C, Sec. VII
PH-PK4-BC1	Belt Conveyor	276 tph	1950	N/A	N/A	N/A	Att. C, Sec. VII
PH-PZ2-BC1	Belt Conveyor	276 tph	1999	Mollers	N/A	N/A	Att. C, Sec. VII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
PH-PZ2-BC2	Belt Conveyor	276 tph	1999	Mollers	N/A	N/A	Att. C, Sec. VII
PH-PZ2-BC3	Belt Conveyor	276 tph	1999	Mollers	N/A	N/A	Att. C, Sec. VII
PH-PZ2-BC4	Belt Conveyor	276 tph	1999	Mollers	N/A	N/A	Att. C, Sec. VII
PH-PZ2-BC5	Belt Conveyor	276 tph	1999	Mollers	N/A	N/A	Att. C, Sec. VII
PH-PZ2-GRC	Roller Conveyor	276 tph	1999	Mollers	N/A	N/A	Att. C, Sec. VII
PH-PZ2-PRC1	Roller Conveyor	276 tph	1999	Mollers	N/A	N/A	Att. C, Sec. VII
PH-PZ2-PRC2	Roller Conveyor	276 tph	1999	Mollers	N/A	N/A	Att. C, Sec. VII
PH-PZ2-SE1A	Sack Elevator	276 tph	N/A	St. Regis	N/A	N/A	Att. C, Sec. VII
PH-PZ2-SE1B	Sack Elevator	276 tph	N/A	St. Regis	N/A	N/A	Att. C, Sec. VII
PH-DC1	Dust Collector	N/A	1979	Mikropul	144S-10-20	79296H1	Att. C, Sec. VII
PH-DC2	Dust Collector	N/A	1979	Mikropul	144S-10-20	79296H2	Att. C, Sec. VII
PH-DC3	Dust Collector	N/A	1985	Mikropul	100S-8-20	855258H1	Att. C, Sec. VII
PH-DC4	Dust Collector	N/A	1985	Mikropul	100S-8-20	855259	Att. C, Sec. VII
PH-DC5	Dust Collector	N/A	1975	Mikropul	100S-8-20	N/A	Att. C, Sec. VII
Various enclosed screw conveyor devices							
Various air slide devices							
Various pneumatic conveying devices							
XXI: Solid Fuel (Coal/Coke) System							

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
H3-K1-BS1	Weigh Belt Feeder	10 tph	Pre Oct. 1974	Thayer	N/A	N/A	Att. C, Sec. III.B
H3-K1-CM	Coal Mill	10 tph	Pre Oct. 1974	C. E. Raymond	493	N/A	Att. C, Sec. III.B
H3-K1-CM-CC	Cyclone	10 tph	Pre Oct. 1974	C.E. Raymond	N/A	N/A	Att. C, Sec. III.B
H3-K1-CM-SB	Storage Bin	54 tons	Pre Oct. 1974	N/A	N/A	N/A	Att. C, Sec. III.B
H3-K2-BS1	Weigh Belt Feeder	10 tph	Pre Oct. 1974	Thayer	N/A	N/A	Att. C, Sec. III.B
H3-K2-CM	Coal Mill	10 tph	Pre Oct. 1974	C. E. Raymond	493	N/A	Att. C, Sec. III.B
H3-K2-CM-CC	Cyclone	10 tph	Pre Oct. 1974	C.E. Raymond	N/A	N/A	Att. C, Sec. III.B
H3-K2-CM-SB	Storage Bin	54 tons	Pre Oct. 1974	N/A	N/A	N/A	Att. C, Sec. III.B
H3-K3-BS1	Weigh Belt Feeder	10 tph	Pre Oct. 1974	Thayer	N/A	N/A	Att. C, Sec. III.B
H3-K3-CM	Coal Mill	10 tph	Pre Oct. 1974	C. E. Raymond	493	N/A	Att. C, Sec. III.B
H3-K3-CM-CC	Cyclone	10 tph	Pre Oct. 1974	C.E. Raymond	N/A	N/A	Att. C, Sec. III.B
H3-K3-CM-SB	Storage Bin	54 tons	Pre Oct. 1974	N/A	N/A	N/A	Att. C, Sec. III.B
H3-K4-BS1	Weigh Belt Feeder	25 tph	2008	Merrick	450	450-MC3-29671	Att. C, Sec. III.C
H3-K4-CM	Coal Mill	25 tph	Pre Oct. 1974	C. E. Raymond	713	N/A	Att. C, Sec. III.B
H3-K4-CM-CC	Cyclone	25 tph	Pre Oct. 1974	C.E. Raymond	N/A	N/A	Att. C, Sec. III.B
H3-K4-CM-SB	Storage Bin	150 tons	Pre Oct. 1974	N/A	N/A	N/A	Att. C, Sec. III.B
H3-K4-CM-SS	Separator	25 tph	2002	Alstom Preheater	N/A	N/A	Att. C, Sec. III.B

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
R6-BA1	Vibrating Feeder	50 tph	Pre Oct. 1974	N/A	N/A	N/A	Att. C, Sec. III.B
R6-BA2	Vibrating Feeder	50 tph	Pre Oct. 1974	N/A	N/A	N/A	Att. C, Sec. III.B
R6-BA3	Vibrating Feeder	50 tph	Pre Oct. 1974	N/A	N/A	N/A	Att. C, Sec. III.B
R6-BC1	Belt Conveyor	150 tph	Pre Oct. 1974	Thomas Conveyors	N/A	N/A	Att. C, Sec. III.B
R6-BC2	Belt Conveyor	100 tph	Pre Oct. 1974	Thomas Conveyors	N/A	N/A	Att. C, Sec. III.B
R6-BC3	Belt Conveyor	100 tph	Pre Oct. 1974	Thomas Conveyors	N/A	N/A	Att. C, Sec. III.B
R6-BS1	Belt Scale	50 tph	1993	Thayer	N/A	N/A	Att. B, Sec. IV
R6-HOP	Hopper	50 tons	1994	N/A	N/A	N/A	Att. B, Sec. IV
R6-IC1	Impact Crusher	50 tph	2009	Pennsylvania Crusher	TKK 26x30	N/A	Att. C, Sec. III.C
R6-SB	Silo	2500 tons	Pre Oct. 1974	N/A	N/A	N/A	Att. C, Sec. III.B
R6-SCF1	Screw Feeder	50 tph	1994	N/A	N/A	N/A	Att. B, Sec. IV
R6-VF3	Vibrating Feed Hopper	50 tph	Pre Oct. 1974	N/A	N/A	N/A	Att. C, Sec. III.B
R6-VF4	Vibrating Feed Hopper	50 tph	Pre Oct. 1974	N/A	N/A	N/A	Att. C, Sec. III.B
R6-VF5	Vibrating Feed Hopper	50 tph	Pre Oct. 1974	N/A	N/A	N/A	Att. C, Sec. III.B
R6-VF1	Vibrating Feeder	500 tph	2003~~TBD~~	Kinergy~~JVI~~	KDF-30-~~UPF 1220~~	KDF-7228 ~~3681~~	Att. C, Sec. III.C
R6-VF2	Vibrating Feeder	500 tph	2003~~TBD~~	Kinergy~~JVI~~	HD ~~UPF 1220~~	KDF-7229~~3680~~	Att. C, Sec. III.C
RB-VF1	Vibrating Feeder	500 tph	TBD	JVI	UPF 1220	3681	Att. C, Sec. III.C
RB-VF2	Vibrating Feeder	500 tph	TBD	JVI	UPF 1220	3680	Att. C, Sec. III.C
R6-BC1A	Belt Conveyor	800 tph	TBD	Balzer Pacific	N/A	78566	Att. C, Sec. III.C

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
R6-BC5	Belt Conveyor	800 tph	TBD	Balzer Pacific	N/A	78565	Att. C, Sec. III.C
R6-TS1	Radial Stacker Belt	800 tph	TBD	Masaba	Magnum	2022228	Att. C, Sec. III.C
R6-BC4	Belt Conveyor	100 tph	2022	Goodfellow	Custom	C10329	Att. C, Sec. III.C
Various enclosed screw conveyor devices							
XXII: Twin Peaks Rock and Stone Aggregate Plant							
AGG-LS1	Lime Silo	TBD	TBD	TBD	TBD	TBD	Att. C, Sec. X
AGG-LS1-DC	Lime Bin Vent	TBD	TBD	TBD	TBD	TBD	Att. C, Sec. X
B11-BC1	Belt Conveyor	1,200 tph	2020	Goodfellow	Custom	C10123	Att. B, Sec. III.E
B11-BC2	Belt Conveyor	1,200 tph	2020	Goodfellow	Custom	C10215	Att. B, Sec. III.E
B11-TS-BC1	Belt Conveyor	1,200 tph	2020	Masaba	Magnum	2020362	Att. B, Sec. III.E
B11-TS-BC2	Belt Conveyor	1,200 tph	2020	Masaba	Magnum	2020362	Att. B, Sec. III.C (for emissions when transferring to a stockpile) Att. B, Sec. III.E (for the actual belt conveyor)

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
~~C-4~~ C-1	Belt Conveyor	800 tph	1985	Spaulding	42"X25' ~~48x28~~	TR143-85-1338	Att. B, Sec. III.D
~~C-5~~ C-2	Belt Conveyor	800 tph	1985	Spaulding	30"x60' ~~42x80~~	80x42T-85-1339	Att. B, Sec. III.D
~~C-26~~C-3	Belt Conveyor	300 tph	1985	N/A	30x30	N/A	Att. B, Sec. III.D
C-4	Portable Conveyor	N/A	N/A	N/A	60"X 25'	N/A	Att. B, Sec. III.D
~~C-7~~ C-5	Belt Conveyor	400 tph	~~1985~~ TBD	TBD ~~Spaulding~~	~~36x60~~ 42"x150'	~~60x36T-85-1341~~ TBD	Att. B, Sec. III.D
~~C-44~~ C-6	Cone Crusher Under Conveyor	400 tph ~~TBD~~	~~TBD~~ 2022	Sandvick ~~TBD~~	36"X35' ~~K400~~	N/A~~TBD~~	Att. B, Sec. III.E
~~C-33~~ C-7	Belt Conveyor	TBD	TBD	TBD	36" x 100' Conveyor	TBD	Att. B, Sec. III.E
~~C-6~~ C-8	Belt Conveyor	400 tph	1985	Spaulding	36x20 ~~18~~	TR144-85-1340	Att. B, Sec. III.D
~~C-46~~ C-9	Belt Conveyor	~~TBD~~ 400 tph	~~TBD~~ 2022	~~TBD~~ Goodfellow	36" x ~~60'~~20' Conveyor	N/A~~TBD~~	Att. B, Sec. III.E
~~C-31~~C-10	Belt Conveyor	400 tph ~~TBD~~	1985 ~~TBD~~	TBD	36" x ~~6~~100' Conveyor	TBD	Att. B, Sec. III.E
~~C-35~~C-11	Belt Conveyor	400 tph ~~TBD~~	2022 ~~TBD~~	~~TBD~~Goodfellow	36" x 100' Conveyor	TBD	Att. B, Sec. III.E
~~C-32~~C-12	Belt Conveyor	400 tph ~~TBD~~	1985 ~~TBD~~	~~TBD~~N/A	36" x ~~6~~100' Conveyor	~~TBD~~ N/A	Att. B, Sec. III.D~~E~~
~~C-16~~C-13	Radial Stacker	400 tph	1985	Spaulding	30x100RS	100x30T-85-1347	Att. B, Sec. III.C~~D~~
~~C-13~~	~~Belt Conveyor~~	~~300 tph~~	~~1985~~	~~N/A~~	~~30x60~~	~~N/A~~	~~Att. B, Sec. III.D~~
C-14	Belt Conveyor	400 tph	N/A	N/A	36"x60'	N/A	Att. B, Sec. III.D

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
C-15	Belt Conveyor	400 tph	N/A	N/A	36"x60'	N/A	Att. B, Sec. III.D
~~C-15~~C-16	Belt Conveyor	300 tph	1985	N/A	360"x460'	N/A	Att. B, Sec. III.D
~~C-12~~ C-17	Belt Conveyor	400 tph	~~1985~~2022	~~Spaulding~~Goodfellow	~~36x18~~ 30"x30'	TR145-85- 1350	Att. B, Sec. III.D
~~C-27~~C-18	Belt Conveyor	300 tph	~~1985~~ 2022	~~N/A~~ Goodfellow	30"x60'	N/A	Att. B, Sec. III.D
~~C-18~~	~~Belt Conveyr~~						
C-19	Stacker	200 TPH	1985	Spaulding	24"x100'	N/A	Att. B, Sec. III.C
~~C-34~~C-20	Belt Conveyor	250 tph ~~TBD~~	1985 ~~TBD~~	N/A~~TBD~~	36"X80' ~~36" x 100'~~ Conveyor	TBD	Att. B, Sec. III.E
~~C-43~~C-21	Under Screen Belt Triple Deck S-3	400 tph ~~TBD~~	TBD	Diester ~~TBD~~	~~8'~~ 36'' x 20'	~~TBD~~N/A	Att. B, Sec. III.E
~~C-29~~C-22	Under Screen Belt Triple Deck S-4 ~~Belt Conveyor~~	400 tph ~~TBD~~	~~TBD~~ 1985	Diester ~~TBD~~	36" x 2~~1~~00' Conveyor	~~TBD~~N/A	Att. B, Sec. III.E
~~C-17~~C-23	Belt Conveyor	400 tph	1985	N/A	~~30x30~~ 36"x40'	N/A	Att. B, Sec. III.D
~~C-48~~C-24	Radial Stacker Conveyor	400 tph ~~TBD~~	1985 ~~TBD~~	N/A ~~TBD~~	30~~6~~" x 60~~125~~' Conveyor	N/A~~TBD~~	Att. B, Sec. III.~~E~~C
~~C-10~~ C-25	Belt Conveyor	400 tph	1985	N/A	30x100	N/A	Att. B, Sec. III.D
C-26	Belt Conveyor	400 tph	N/A	N/A	36"x100'	N/A	Att. B, Sec. III.D
~~C-11~~ C-27	Belt Conveyor	400 tph	2022 ~~1985~~	Goodfellow~~Spaulding~~	30"X20'~~36x18~~	TR145-85- 1343	Att. B, Sec. III.D
~~C-30~~C-28	Belt Conveyor	400 tph ~~TBD~~	~~TBD~~2022	Goodfellow ~~TBD~~	36" x 6~~1~~00' Conveyor	~~TBD~~N/A	Att. B, Sec. III.E
C-29	Under Screen Belt Triple Deck S-4	400 tph	1985	Diester	36"X20'	N/A	Att. B, Sec. III.D

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
Splitter 1	Splitter	N/A	N/A	N/A	N/A	N/A	N/A
Splitter 2	Splitter	N/A	N/A	N/A	N/A	N/A	N/A
Splitter 3	Splitter	TBD	TBD	TBD	TBD	TBD	N/A
C-68	Belt Conveyor	400 tph	TBD	TBD	36"x100'	TBD	Att. B, Sec. III.E
BM-2	Blade Mill	500 tph	TBD	Twin	54"x20'	TBD	Att. B, Sec. I.D
FM-5	Fine Material Washer	200 tph	TBD	Twin	36"	TBD	Att. B, Sec. I.D
DWS-4	Dewatering Screen	200 tph	TBD	TBD	TBD	TBD	Att. B, Sec. I.D
S-1	~~Portable Screen (1 out of 4)~~ 8x20 Wash Screen	500 tph	TBD	TBD	TBD	TBD	Att. B, Sec. I.D
~~S-6~~S-2	Screen	800 tph	1985	Diester	6x20 2 D	398592	Att. B, Sec. III.D
~~S-11~~S-3	Screen	400 tph	1985	Diester	6x20 3 D	398593	Att. B, Sec. III.D
~~S-12~~S-4	Screen	400 tph	1985	Diester	6x20 3 D	398594	Att. B, Sec. III.D
CR-1	Portable Crusher	400 tph	2022	Sandvick	CH550	N/A	Att. B, Sec. III.E
Hopper 1	Hopper	800 tph~~N/A~~	1985	N/A	N/A	N/A	Att. B, Sec. III.D
Hopper 2	Hopper	100 tph~~N/A~~	1985	N/A	N/A	N/A	Att. B, Sec. III.D
N/A	Belt Conveyor	200 tph	1985	Spaulding	24x37	33x24T-85-1359	Att. B, Sec. III.D
N/A	Stacker	200 tph	1985	Spaulding	24x100 FS	100x24T-85-1358	Att. B, Sec. III.C
N/A	Portable Feeder Conveyor	200 tph	1985	Helmick	30x68	4635-1330-6083B	Att. B, Sec. III.D
~~N/A~~	~~Portable Crushers (Max Qty: 3)~~	~~895 tph (combined)~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~Att. B, Sec. III.D~~

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
N/A	Portable Screens (Max Qty:2 ~~4~~)	2006 tph (combined)	N/A	N/A	N/A	N/A	Att. B, Sec. III.D
N/A	Portable Conveyors (Max Qty: 1~~45~~)	4483 tph (combined)	N/A	N/A	N/A	N/A	Att. B, Sec. III.D
B11-DC1	Dust Collector	N/A	Pre August 1971	Mikropul	100S-8-20	71-H-1396	Att. B, Sec. III.E
TP-DC1	Dust Collector	8,395 cfm	2022	Donaldson Torit	60/15	TBD	Att. B, Sec III.D
XXIII: Cotton Field Primary and Overland Plant							
F-2	Vibrating Grizzly Feeder	800 tph	1985	Diester	5x22	64-177	Att. B, Sec. III.C~~D~~
~~CR-3~~CR-2	Portable ~~Jaw~~ Crusher	4050 tph	1985	Kue Ken	34x42 Jaw	120S12857R	Att. B, Sec. III.D
C-30	Belt Conveyor	800 tph	N/A	N/A	48"x40'	N/A	Att. B, Sec. III.E
C-31	Belt Conveyor	800 tph	N/A	N/A	36"x100	N/A	Att. B, Sec. III.E
C-32	Belt Conveyor	800 tph	N/A	N/A	36"x100	N/A	Att. B, Sec. III.E
C-33	Belt Conveyor	800 tph	N/A	N/A	36"x60'	N/A	Att. B, Sec. III.E
C-34	Belt Conveyor	800 tph	N/A	N/A	48"x40'	N/A	Att. B, Sec. III.E
C-35	Belt Conveyor	800 tph	N/A	N/A	60"x25'	N/A	Att. B, Sec. III.E
C-36	Belt Conveyor	800 tph ~~TBD~~	N/A ~~TBD~~	N/A ~~TBD~~	36" x 100' Conveyor	TBD	Att. B, Sec. III.E
C-37	Belt Conveyor	800 tph ~~TBD~~	N/A ~~TBD~~	N/A ~~TBD~~	36" x 100' Conveyor	TBD	Att. B, Sec. III.E
C-38	Belt Conveyor	800 tph ~~TBD~~	N/A ~~TBD~~	N/A ~~TBD~~	36" x 100' Conveyor	TBD	Att. B, Sec. III.E
C-39	Belt Conveyor	800 tph ~~TBD~~	N/A ~~TBD~~	N/A ~~TBD~~	36" x 100' Conveyor	TBD	Att. B, Sec. III.E
C-40	Belt Conveyor	800 tph ~~TBD~~	N/A ~~TBD~~	N/A ~~TBD~~	36" x 100' Conveyor	TBD	Att. B, Sec. III.E
C-41	Belt Conveyor	800 tph ~~TBD~~	N/A ~~TBD~~	N/A ~~TBD~~	36" x 100' Conveyor	TBD	Att. B, Sec. III.E

ADEQ Arizona Department of Environmental Quality

ATTACHMENT "D": EQUIPMENT LIST

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
C-42	Belt Conveyor	800 tph ~~TBD~~	N/A ~~TBD~~	N/A ~~TBD~~	36" x 100' Conveyor	TBD	Att. B, Sec. III.E
C-43	Belt Conveyor	800 tph	N/A	N/A	36" x 100' Conveyor	N/A	Att. B, Sec. III.E
C-44	Belt Conveyor	800 tph	N/A	N/A	36" x 100' Conveyor	N/A	Att. B, Sec. III.E
C-74	Belt Conveyor	800 tph	N/A	N/A	36"x150'	N/A	Att. B, Sec. III.E
S-5	Portable Screen	N/A	N/A	N/A	N/A	N/A	Att. B, Sec. III.E
XXIV: Manufactured Fines Plant							
C-45	Radial Super Stacker	TBD	TBD	TBD	36" x 150'	TBD	Att. B, Sec. III.C
C-46	Belt Conveyor	TBD	TBD	TBD	TBD	TBD	Att. B, Sec. III.E
C-47	Belt Conveyor	TBD	TBD	TBD	36" x 60' Conveyor	N/ATBD	Att. B, Sec. III.E
C-69	Belt Conveyor	TBD	TBD	TBD	TBD	TBD	Att. B, Sec. III.E
C-70	Belt Conveyor	TBD	TBD	TBD	TBD	TBD	Att. B, Sec. III.E
C-71	Belt Conveyor	TBD	TBD	TBD	TBD	TBD	Att. B, Sec. III.E
C-72	Belt Conveyor	TBD	TBD	TBD	TBD	TBD	Att. B, Sec. III.E
C-73	Belt Conveyor	TBD	TBD	TBD	TBD	TBD	Att. B, Sec. III.E
CR-4	Portable Crusher	N/A	N/A	N/A	N/A	N/A	Att. B, Sec. III.E
Hopper 4	Hopper	TBD	TBD	TBD	TBD	TBD	Att. B, Sec. III.C
S-6	Portable Screen	N/A	N/A	N/A	N/A	N/A	Att. B, Sec. III.E
TBD	CR-4 Baghouse	8,395 cfm	TBD	Donaldson Torit	TBD	TBD	TBD

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
XXV: Wash Plant							
C-47	Belt Conveyor	750 tph	TBD	TBD	36"x100	TBD	Att. B, Sec. III.E
C-48	Belt Conveyor	750 tph	TBD	TBD	36"x150'	TBD	Att. B, Sec. III.E
C-49	Belt Conveyor	750 tph	TBD	TBD	36"x80'	TBD	Att. B, Sec. III.E
C-50	Belt Conveyor	750 tph	TBD	TBD	36"x100	TBD	Att. B, Sec. III.E
C-51	Belt Conveyor	750 tph	TBD	TBD	48"x60'	TBD	Att. B, Sec. III.E
C-52	Belt Conveyor	750 tph	TBD	TBD	36"x80'	TBD	Att. B, Sec. III.E
C-53	Belt Conveyor	750 tph	TBD	TBD	36"x100	TBD	Att. B, Sec. III.E
C-54	Belt Conveyor	750 tph	TBD	TBD	36"x80'	TBD	Att. B, Sec. III.E
C-55	Belt Conveyor	750 tph	TBD	TBD	36"x100	TBD	Att. B, Sec. III.E
C-56	Belt Conveyor	750 tph	TBD	TBD	36"x80'	TBD	Att. B, Sec. III.E
C-57	Belt Conveyor	750 tph	TBD	TBD	36"x100	TBD	Att. B, Sec. III.E
C-58	Belt Conveyor	750 tph	TBD	TBD	36"x80'	TBD	Att. B, Sec. III.E
C-59	Belt Conveyor	750 tph	TBD	TBD	36"x100	TBD	Att. B, Sec. III.E
C-60	Belt Conveyor	750 tph	TBD	TBD	36"x80'	TBD	Att. B, Sec. III.E
C-61	Belt Conveyor	750 tph	TBD	TBD	36"x100	TBD	Att. B, Sec. III.E

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
C-62	Belt Conveyor	750 tph	TBD	TBD	36"x80'	TBD	Att. B, Sec. III.E
C-63	Belt Conveyor	750 tph	TBD	TBD	36"x100	TBD	Att. B, Sec. III.E
C-64	Belt Conveyor	750 tph	TBD	TBD	36"x80'	TBD	Att. B, Sec. III.E
C-65	Belt Conveyor	750 tph	TBD	TBD	36"x100'	TBD	Att. B, Sec. III.E
C-66	Belt Conveyor	750 tph	TBD	TBD	36"x60	TBD	Att. B, Sec. III.E
C-67	Belt Conveyor	750 tph	TBD	TBD	36"x60	TBD	Att. B, Sec. III.E
Hopper 5	Hopper	500 tph	TBD	TBD	TBD	TBD	Att. B, Sec. III.C
S-7	Screen	500 tph	TBD	TBD	8x20	TBD	Att. B, Sec. III.E
S-8	Screen	350 tph	TBD	TBD	8x20	TBD	Att. B, Sec. III.E
BM-1	Blade Mill	500 tph	TBD	McLanahan	Twin 54"x20	TBD	Att. B, Sec. I.D
CMW-1	Coarse Material Washer	350 tph	TBD	TBD	Twin 44"x20"	TBD	Att. B, Sec. I.D
FM-1	Fine Material Washer	200 tph	TBD	Superior Industries	Single 36" x 25'	TBD	Att. B, Sec. I.D
FM-2	Fine Material Washer	200 tph	TBD	Superior Industries	Aggredry	TBD	Att. B, Sec. I.D
FM-3	Fine Material Washer	400 tph	TBD	Superior Industries	Aggredry	TBD	Att. B, Sec. I.D
FM-5	Fine Material Washer	200 tph	TBD	Superior Industries	Aggredry	TBD	Att. B, Sec. I.D
DWS-1	Dewatering Screen	200 tph	TBD	Superior Industries	Aggredry	TBD	Att. B, Sec. I.D

DWS-2	Dewatering Screen	200 tph	TBD	Superior Industries	Aggredry	TBD	Att. B, Sec. I.D
DWS-3	Dewatering Screen	200 tph	TBD	Superior Industries	Aggredry	TBD	Att. B, Sec. I.D
Classifying Tank	Classifying Tank	TBD	TBD	Superior Industries	AR136 12×48	TBD	N/A
HRT-60	High Rate Thickener	HRT-60	TBD	McLanahan	TBD	TBD	N/A
XX~~I~~VI~~I~~:Portable Grizzly Screen							
R1-SGR	Portable Grizzly	50 tph	2009	N/A	N/A	N/A	Att. B, Sec. III.D Att. B, Sec. IV
XX~~I~~VII: Fuel Burning Equipment							
AGG-Gen	Non-Emergency Diesel Engine	1,500 hp	TBD	TBD	TBD	TBD	Att. B, Sec. V.D/E
T1-MG1	Diesel Emergency Generator	250 hp engine	1989	Kohler/John Deere	150ROJZ/6 076A	256422/RG6 067A123344	Att. B, Sec. V.B/C
H3-K-MG	NG Motor Generator	134 hp	2000	Caterpillar	N/A	N/A	Att. B, Sec. V.B/C
H3-K4-AUX	NG Auxiliary Engine	70 hp	1971	Caterpillar	N/A	N/A	Att. B, Sec. V.B/C
H4-MG1	NG Emergency Generator	675 hp engine output	2018 (Model Year 1994)	Caterpillar	3415SITA	N/A	Att. B, Sec. V.B
Bunker C Boiler	NG Boiler	6.275 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Central Control Heating Boiler	NG Boiler	0.825 MMBtu/hr	1971	Thermo-Pak	6WA-825	N/A	Att. B, Sec. VI
D4-RM1-HTR	NG Heater	75 MMBtu/hr	2000	N/A	N/A	N/A	Att. B, Sec. VI
Separator Heaters (4)	Natural Gas	2 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Direct-Fired Heaters (2)	Natural Gas	2 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Elevator Heaters (4)	Natural Gas	0.5 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
Water Heater	NG Boiler	0.075 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Water Heater	NG Boiler	0.046 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Water Heater	NG Boiler	0.04 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Unit Heater	Natural Gas	0.3 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Unit Heater (3)	Natural Gas	0.25 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Carpenter Shop Unit Heater	Natural Gas	0.1 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Unit Heater (2)	Natural Gas	0.075 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Radiant Heaters (7)	Natural Gas	0.03 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Office Furnace	Natural Gas	0.18 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Office Furnaces (2)	Natural Gas	0.08 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Office Furnace	Natural Gas	0.05 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Furnaces (3)	Natural Gas	0.04 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
Furnaces (3)	Natural Gas	0.025 MMBtu/hr	N/A	N/A	N/A	N/A	Att. B, Sec. VI
XXVIII: Petroleum Storage Tanks/Vessels							
Diesel	Aboveground	50,000 gallons	pre-1980	N/A	N/A	N/A	Att. B, Sec. VIII
Diesel	Aboveground	12,000 gallons	N/A	N/A	N/A	N/A	Att. B, Sec. VIII

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
On- Specification Used Oil	Aboveground	31,000 gallons	N/A	N/A	N/A	N/A	Att. B, Sec. VIII
On-Specification Used Oil (2)	Aboveground	28,700 gallons	N/A	N/A	N/A	N/A	Att. B, Sec. VIII
Gasoline	Aboveground	2,000 gallons	1986	N/A	N/A	N/A	Att. B, Sec. VII
Lube Tank (6)	Aboveground	1,000 gallons	N/A	N/A	N/A	N/A	Att. B, Sec. VIII
Used Oil (2)	Aboveground	2,000 gallons	N/A	N/A	N/A	N/A	Att. B, Sec. VIII
Bunker C	Aboveground	50,000 bbl	1974	N/A	N/A	N/A	Att. B, Sec. VIII
XXIX: New Concrete Batch Plant							
BP	ERIE STRAYER TILT MIXER	250 YPH	TBD	ERIE STRAYER	MP-11C	TBD	Att. B, Sec. X Att. C, Sec. X
H-1	Hopper	TBD	TBD	ERIE STRAYER	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
H-2	Hopper	TBD	TBD	ERIE STRAYER	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
H-3	Hopper	TBD	TBD	ERIE STRAYER	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
H-4	Hopper	TBD	TBD	ERIE STRAYER	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
BP- C -1	GROUND FEED BELT	500 TPH	TBD	ERIE STRAYER	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
BP- C-2	GROUND FEED BELT	500 TPH	TBD	ERIE STRAYER	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
BP- C -3	GROUND FEED BELT	500 TPH	TBD	ERIE STRAYER	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
BP- C -4	GROUND FEED BELT	500 TPH	TBD	ERIE STRAYER	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
BP-S-1	Overhead Silo	70 TONS	TBD	ERIE STRAYER	TBD	TBD	Att. B, Sec. X Att. C, Sec. X

ADEQ Arizona Department of Environmental Quality

ATTACHMENT "D": EQUIPMENT LIST

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
BP-S-2	Overhead Silo	70 TONS	TBD	ERIE STRAYER	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
BP-S-3	Overhead Silo	70 TONS	TBD	ERIE STRAYER	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
BP-S-4	Super Silo	TBD	TBD	ERIE STRAYER	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
BP-S-5	Guppy	150 TONS	TBD	TBD	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
TBD	Overhead Aggregate Bin 4 Compartment)	80 Yards	TBD	TBD	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
TBD	Aggregate Weigh Hopper (4 bins)	TBD	TBD	TBD	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
TBD	Aggregate Charge Belt	TBD	TBD	TBD	48" X100'	TBD	Att. B, Sec. X Att. C, Sec. X
TBD	Cement Weigh Batcher	TBD	TBD	TBD	TBD	TBD	Att. B, Sec. X Att. C, Sec. X
BP-DC-1	Dust Collector	10,000 CFM	TBD	C&W	RA- 200	TBD	Att. B, Sec. X Att. C, Sec. X
BP-BH-1	Silo Baghouse	2,340	TBD	C&W	LPR-8-S	TBD	Att. B, Sec. X Att. C, Sec. X
BP-BH-2	Silo Baghouse	2,340	TBD	C&W	LPR-8-S	TBD	Att. B, Sec. X Att. C, Sec. X
BP-BH-3	Silo Baghouse	2,340	TBD	C&W	LPR-8-S	TBD	Att. B, Sec. X Att. C, Sec. X
BP-BH-4	Silo Baghouse	2,340	TBD	C&W	LPR-8-S	TBD	Att. B, Sec. X Att. C, Sec. X
BP-C-5	Conveyor	800 TPH	TBD	TBD	48"X20'	TBD	Att. B, Sec. X Att. C, Sec. X
BP-WC-1	Water Chiller	80 Ton	TBD	TBD	TBD	TBD	Trivial Activity per R18-2-

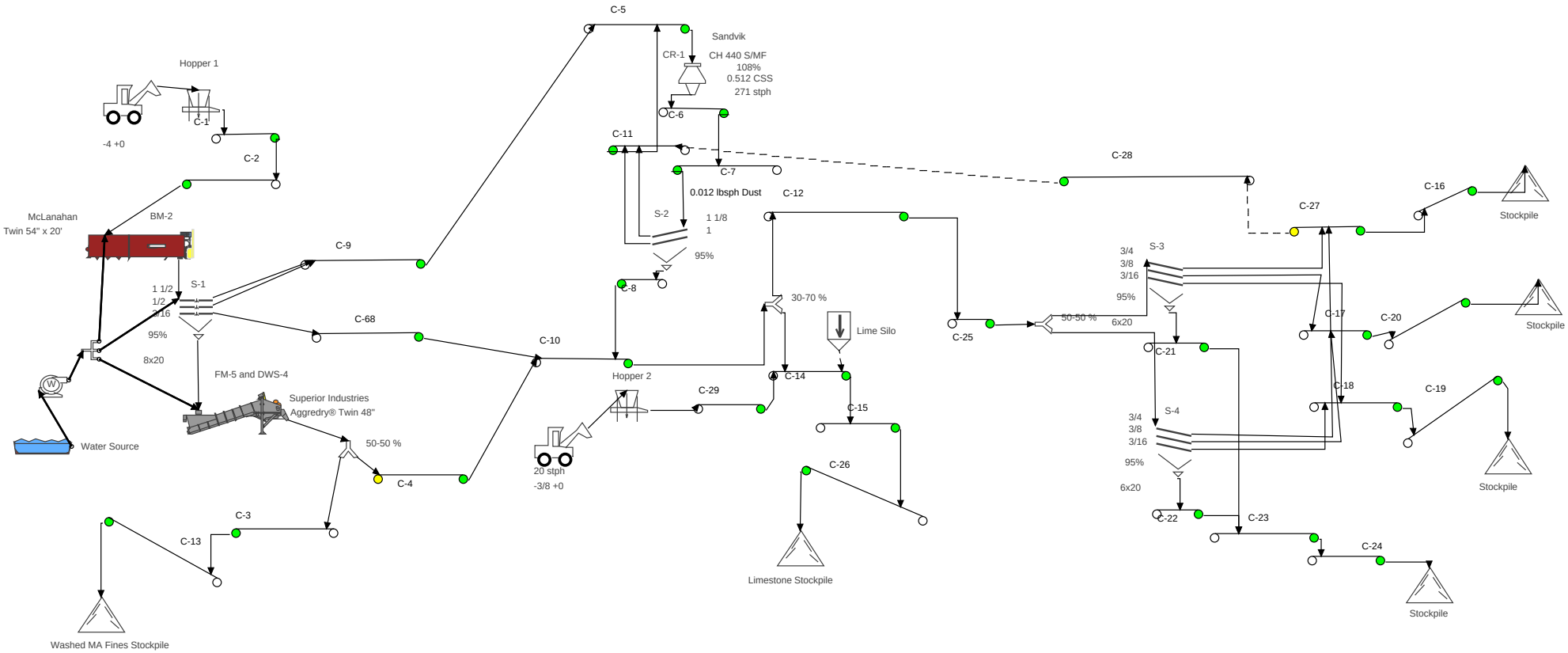
ADEQ Arizona Department of Environmental Quality

ATTACHMENT "D": EQUIPMENT LIST

PROCESS AREA/ EQUIPMENT ID	TYPE/ DESCRIPTION	NOMINAL CAPACITY	YEAR INSTALLED	MANUFACTURER	MODEL	SERIAL NUMBER	APPLICABLE SECTION
							101.147(b)(xv)
Unknown	Air Compressor	25 HP	TBD	INGERSOL RAND	TBD	TBD	Trivial Activity per R18-2-101.147(b)(v)
TBD	WATER TANK	20,000 gallons	TBD	HALTEC	TBD	TBD	Insignificant Activity per R18-2-101.69.c(iv)
TBD	WATER TANK	20,000 gallons	TBD	HALTEC	TBD	TBD	Insignificant Activity per R18-2-101.69.c(iv)
TBD	WATER TANK	20,000 gallons	TBD	HALTEC	TBD	TBD	Insignificant Activity per R18-2-101.69.c(iv)
TBD	WATER TANK	20,000 gallons	TBD	HALTEC	TBD	TBD	Insignificant Activity per R18-2-101.69.c(iv)

APPENDIX C. PROJECT PROCESS FLOW DIAGRAMS

Twin Peaks Cotton Field MA Fines and Wash Plant RT07162025



Calculation results may differ due to variations in operating conditions and application of crushing and screening equipment. This information does not constitute an express or implied warranty, but shows results of calculations based on information provided by customers or equipment manufacturers. Use this information for estimating purposes only.

All calculations performed by AggFlow. http://www.AggFlow.com

CalPortland Company

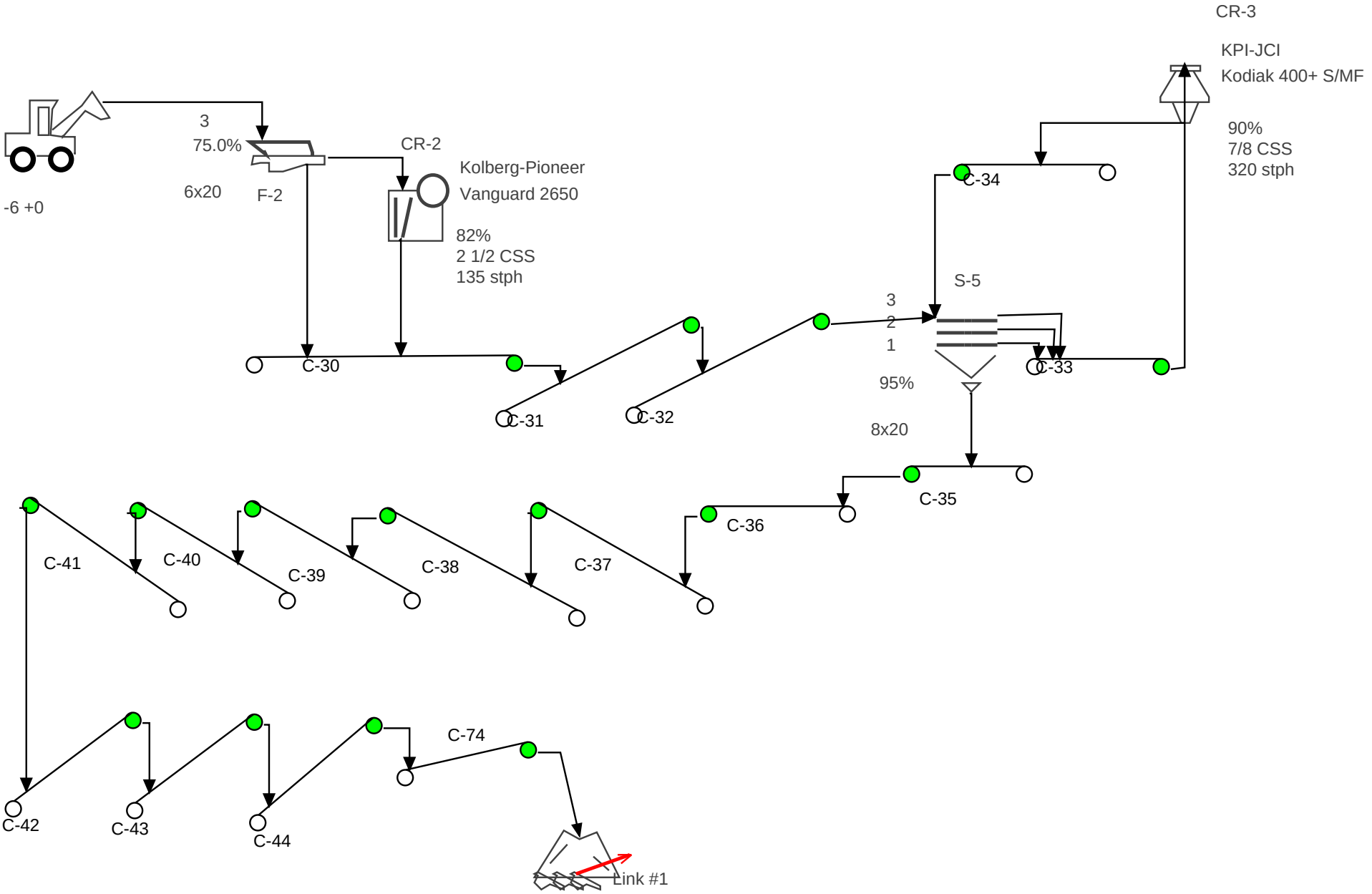
Twin Peaks to Cotton Field 03162021

Rocky Torgrimson

Twin Peaks Existing Plant: Twin Peaks Existing

Project #: 110773 Revision #: 995724 Date: July/16/2025

Twin Peaks Cotton Field MA Fines and Wash Plant RT07162025



Calculation results may differ due to variations in operating conditions and application of crushing and screening equipment. This information does not constitute an express or implied warranty, but shows results of calculations based on information provided by customers or equipment manufacturers. Use this information for estimating purposes only.

All calculations performed by AggFlow. http://www.AggFlow.com

CalPortland Company

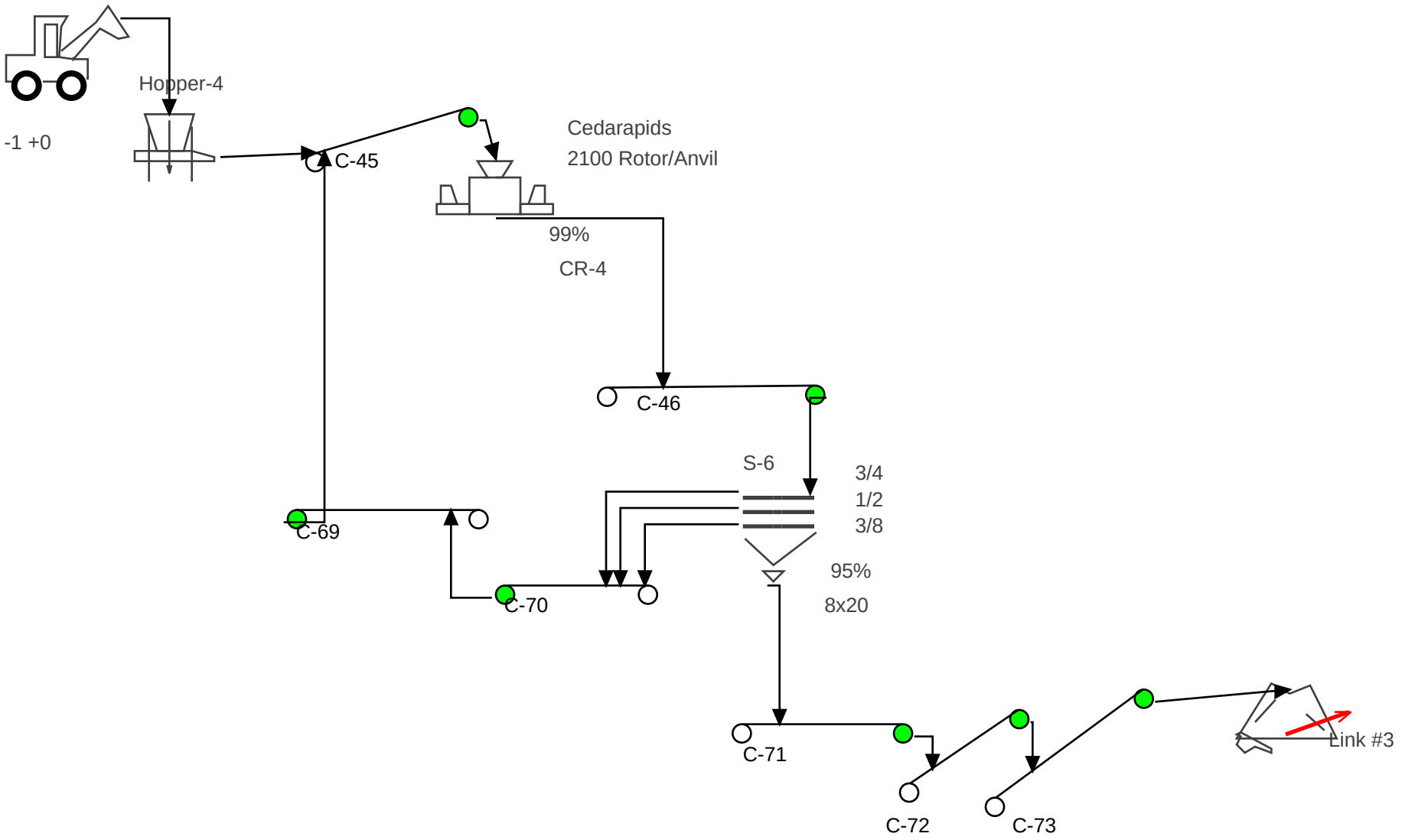
Twin Peaks to Cotton Field 03162021

Rocky Torgrimson

Cotton Field Primary and Overland:

Project #: 110773 Revision #: 995724 Date: July/16/2025

Twin Peaks Cotton Field MA Fines and Wash Plant RT07162025



Calculation results may differ due to variations in operating conditions and application of crushing and screening equipment. This information does not constitute an express or implied warranty, but shows results of calculations based on information provided by customers or equipment manufacturers. Use this information for estimating purposes only.

All calculations performed by AggFlow. http://www.AggFlow.com

CalPortland Company

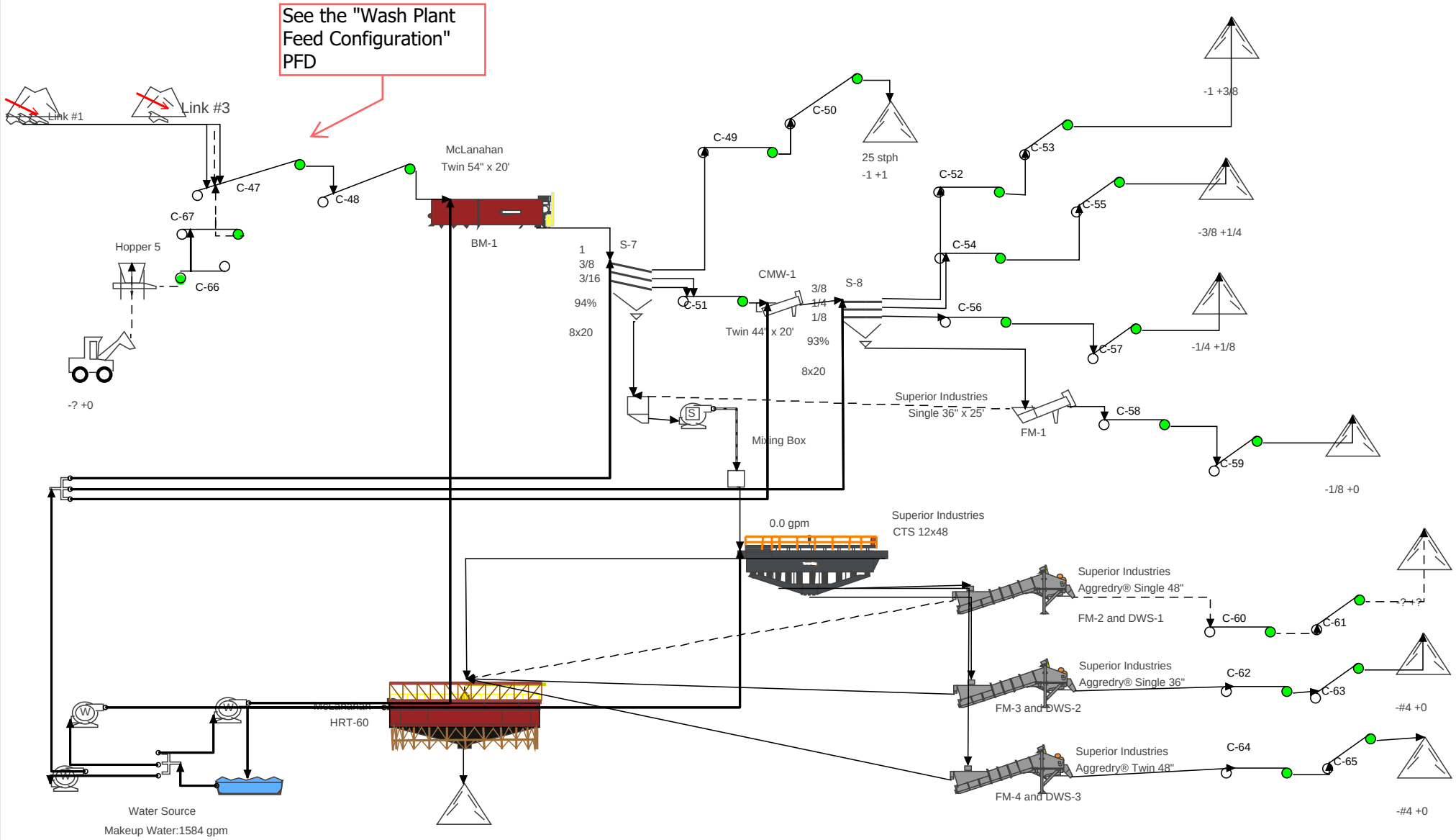
Twin Peaks to Cotton Field 03162021

Rocky Torgrimson

Manufactured Fines Plant:

Project #: 110773 Revision #: 995724 Date: July/16/2025

Twin Peaks Cotton Field MA Fines and Wash Plant RT07162025

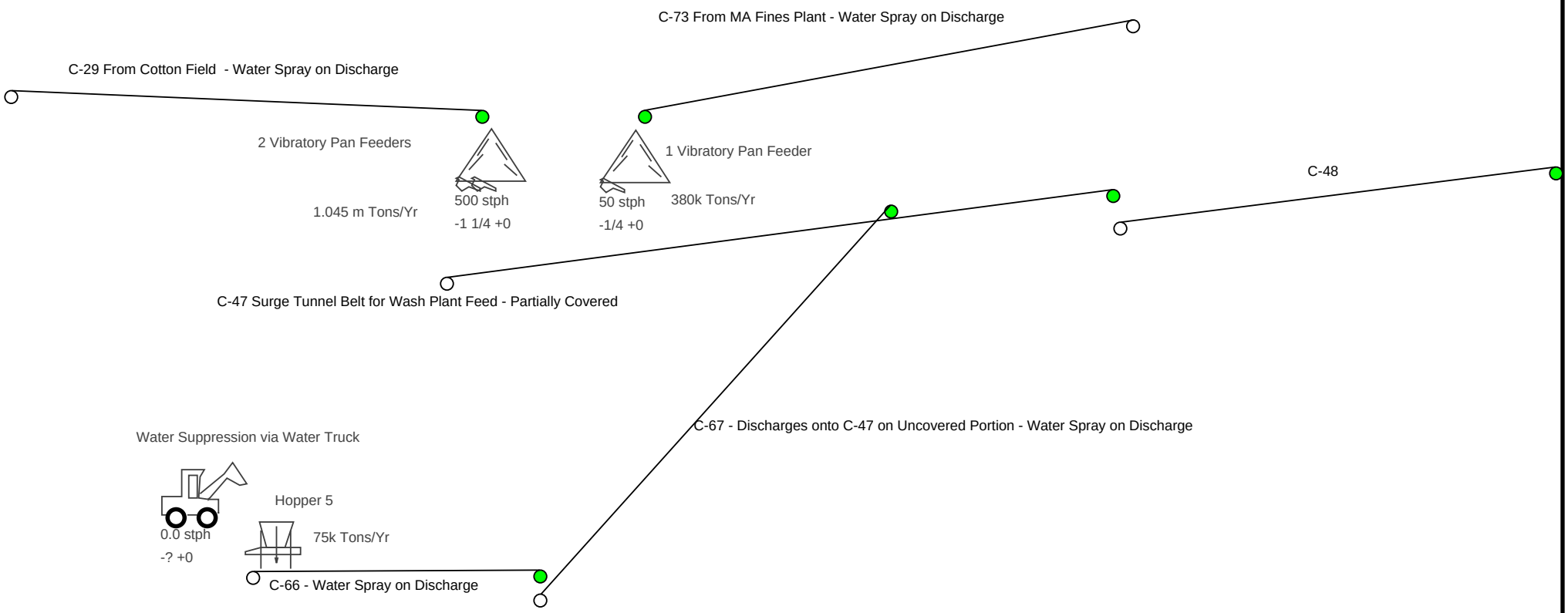


Calculation results may differ due to variations in operating conditions and application of crushing and screening equipment. This information does not constitute an express or implied warranty, but shows results of calculations based on

CalPortland Company

Twin Peaks to Cotton Field 03162021

Wash Plant Feed Configuration



Calculation results may differ due to variations in operating conditions and application of crushing and screening equipment. This information does not constitute an express or implied warranty, but shows results of calculations based on information provided by customers or equipment manufacturers. Use this information for estimating purposes only.

All calculations performed by AggFlow. http://www.AggFlow.com

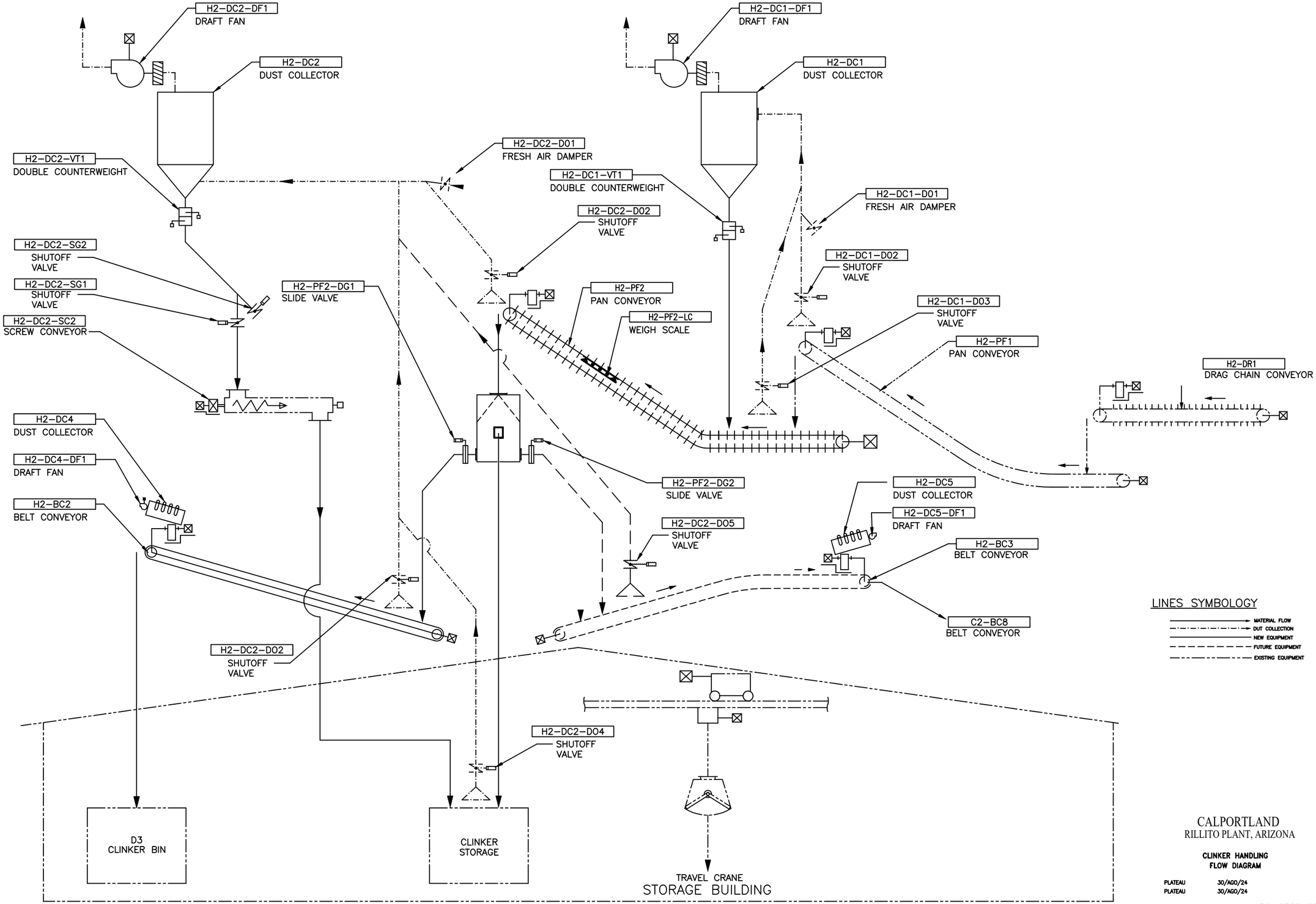
My Company

Twin Peaks

Chad Warren

Plant Stage #1:

Project #: 202219 Revision #: 1007610 Date: August/13/2025



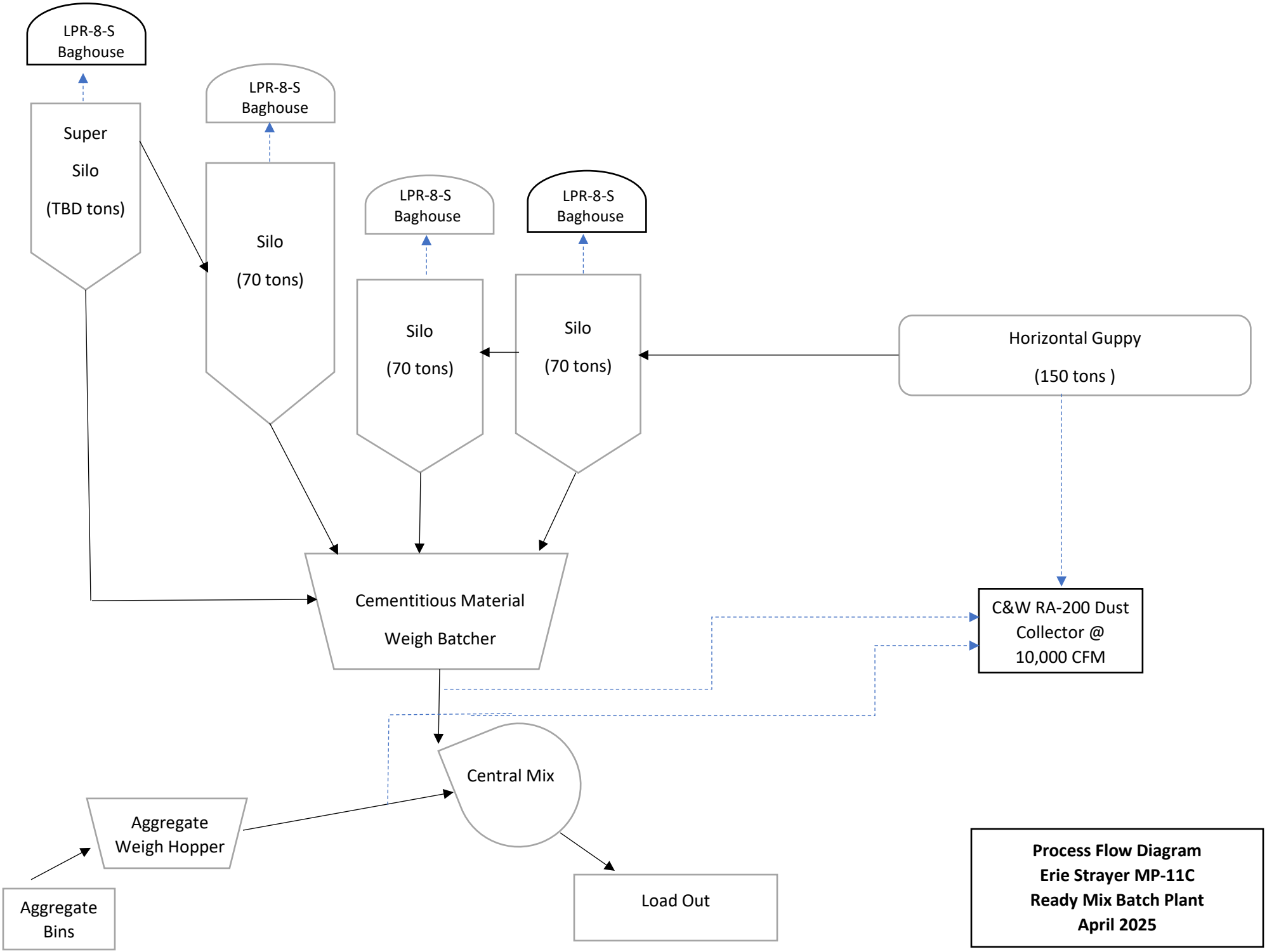
CALPORTLAND
RILLITO PLANT, ARIZONA

CLINKER HANDLING FLOW DIAGRAM

PLATEAU 30/AGO/24
PLATEAU 30/AGO/24

C

RIL-2308-G5


LPR-8-S Baghouse
LPR-8-S Baghouse
LPR-8-S Baghouse
LPR-8-S Baghouse
Super Silo (TBD tons)
Silo (70 tons)
Silo (70 tons)
Silo (70 tons)
Horizontal Guppy (150 tons)
Cementitious Material Weigh Batcher
C&W RA-200 Dust Collector @ 10,000 CFM
Central Mix
Aggregate Weigh Hopper
Aggregate Bins
Load Out
Process Flow Diagram
Erie Strayer MP-11C
Ready Mix Batch Plant
April 2025

SLUMP RACK / TRUCK WASHOUT AREA

COLOR SYSTEM, CEMENT GUPPIES, ADMIXTURES.

PROPOSED AGGREGATE HOPPERS AND CONVEYORS 4 EA.

PROPOSED HOPPERS

PROPOSED AGGREGATE STOCKPILE

PLOT DATE

-

NO.	REVISION	DATE	BY
1	SIMPLIFIED PLAN	3/23/26	

	DATE
DRAWN DRD	3/23/2026
CHK.	
APPVD.	
SCALE N.T.S.	

CALPORTLAND
1490 RUBIDOUX BOULEVARD
RIVERSIDE, CA 92509

TWIN PEAKS
Rillito Arizona
3/23/2026

DWG. NO.

REV. -

APPENDIX D. TECHNICAL INFORMATION

Donaldson Company, Inc.
Industrial Air Filtration
1400 West 94th Street
Bloomington, MN
55431-2370

Mailing Address:
P.O. Box 1299
Minneapolis, MN
55440-1299 U.S.A.

Tel 952-887-3847
Fax 952-698-2479
www.Donaldson.com
www.donaldsontorit.com

Donaldson Company, Inc. Emissions Statement for Industrial Dust Collectors with Dura-Life™ Filter Media

Donaldson Company, Inc. offers an extensive variety of dust collectors and filter media designs to the market to address the wide variety of dust control applications and project needs.

Because dust control projects sometimes demand unique collector selection or location strategies or may involve complex filter media performance considerations it is difficult to make general statements of emission performance. However, Donaldson generally expects total (filterable) particulate emissions from Continuous-Duty Baghouse Collectors using Donaldson Dura-Life filter media to be capable of achieving average emission levels of no more than 0.004 grains per dry standard cubic foot. This level of performance expectation excludes any contributions to emissions from condensable materials (*which will pass through filter media in a vapor state*), and it assumes filters are installed properly and are operated and maintained in accordance with industry best practice and in accordance with the manufacturer's Installation, Operation, and Maintenance manuals for the collector.

Factors which may contribute to unexpected collector emissions include: misuse, accident, abuse, modification, improper installation or operation, inadequate maintenance, and operation beyond recommended selection/sizing guidance or useful life. Emissions may also occur as a result of damage to collectors or filters due to accidents, fires, corrosion, abrasion, or other physical abuse.

Emission performance is also influenced by the style or size of collector selected, by the selection of filter media, and by choices in accessories or features for collectors.

Important Notice: Many factors beyond the control of Donaldson can affect the use and performance of Donaldson products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the Donaldson products to determine whether the product is fit for the particular purpose and suitable for the user's application. This Emissions Statement shall not be construed as or relied upon as a health and safety statement. Donaldson does not require or recommend exhausting emissions into the indoor environment without consultation with a qualified professional to evaluate and address all attendant health and safety risks. It shall be the end user's continued and sole responsibility to provide a safe and healthful environment for its employees.

Donaldson's terms and conditions of sale, as stated in our current quotation, contain the sole obligation and exclusive remedy for any issues that arise regarding information that Donaldson provides in this statement.

Donaldson FILTRATION SOLUTIONS

Product Specifications



P030670-016-210

1.5M DALAMATIC DURA-LIFE BAG FILTER 495 MM FLAT WIDTH X 1506 MM L (19.49" FLAT WIDTH X 59.29" L)

Dura-Life Bag Filter, 495 mm width X 1506 mm length (19.49-inch width X 59.29-inch length), Felt Cuff Top, Flat Sewn Bottom for DLMV 9/15, 15/15, 18/15, 30/15, 45/15, 60/15, DU 30, 45, 60, 90, 120, 135, 150, 180, 225, DLMC X/X/15 and other brands of baghouse collectors.

Attributes

Outer Diameter	12.41 inch (315 mm)
Flat Width	19.49 inch (495 mm)
Length	59.29 inch (1506 mm)
Media Type	Dura-Life
Filter Area	16.15 ft^2 (1.50 m^2)
Temperature Limit	275 °F (135 °C)
Fabric Weight	10.00 oz/yd^2 (339 g/m^2)
Top Construction	Felt Cuff
Bottom Construction	Flat Sewn
Anti-Static	No

Oleophobic	No
Shape	Envelope
Current Brand	Donaldson Torit

Packaged Dimensions

Packaged Length	60 IN
Packaged Width	19.5 IN
Packaged Height	1IN
Packaged Weight	1.475 LB
Packaged Volume	0.6771 FT3

Other Information

Country of Origin	United States
NMFC Code	069100-05
HTS Code	5911900080

The information contained herein is general in nature and may not reflect actual information regarding the part at time of shipment. Parts may originate in more than one country – the actual country of origin and HS Code will be reflected on the Commercial Invoice(s) that accompanies the goods.

© Donaldson Company, Inc.

MP-11C

Low Profile Central Mix Plant

ERIE STRAYER



ERIE STRAYER

YEARS OF EXCELLENCE

- 228 cubic yard per hour* production capabilities
- Superior blending of the toughest mix designs
- Highly engineered and custom-tailored construction
- Innovative plant and safety design features that evolve with the industry

*Estimated production based on industry standards, consult factory for details

MP-11C

Low Profile Central Mix Plant

The ERIE MP-11C is the premier central mix plant in the concrete industry. This highly reliable and rugged plant stands above the competition in performance and technology. The customizable design makes it an ideal choice for any ready-mix operation.

FEATURES

- 10, 12 or 15 cubic yard tilt mixer
- 50 HP mixer hydraulic system
- Automatic central grease and mixer lubrication
- Twin 75 HP crusher-duty TEFC drive motors
- Heavy Duty Auburn M10B reducing units
- Heavy Duty Duroxite mixing buckets and blades
- 715, 935 or 1150 BBL two-compartment cement silo
- Cumulative or individual cement batcher
- 3” Badger electronic water meter
- 36” to 48” batch transfer conveyor
- C&W dust collection systems
- 20 yard to 290 yard aggregate bin
- Cumulative or individual aggregate batcher
- Telescopic test weight hangers
- Ingersoll-Rand air compressor
- Automatic plant grease system
- ERIE Liberty computer control system with manual panel
- Automatic aggregate handling panel



ERIE STRAYER CO.
1851 Rudolph Avenue
Erie, PA 16502

814.456.7001
www.eriestrayer.com
sales@eriestrayer.com

CHARTER MEMBERS:

Tori Tang

From: Don Wier <dwier@cwdusttech.com>
Sent: Monday, June 2, 2025 11:02 AM
To: Tori Tang
Cc: Parts
Subject: RE: CP-LPR-8 & RA-200 Permit Sheet

You don't often get email from dwier@cwdusttech.com. Learn why this is important

Good afternoon, Tori.

We have used the AP-42 method for calculating emissions over 20 years. It is the accepted method used in the state of Texas. If your consultant has a preferred method of performing this calculation, we would be happy to do so.

We sometimes provide the statement below for 100% 8-ounce spun bond polyester:

C&W DustTech also expects the emissions of its cartridge filter, when properly installed, applied, and maintained, and when operated per the design parameters referenced in accordance with the manufacturers operations manuals, to emit no more than approximately 0.005 gr/dscf of air based on dry dust particle sizes of 0.5 microns and larger with an industry average inlet grain loading of 5 grains/dscf.

The buyer will be responsible for any emissions testing expense and C&W DustTech reserves the right to be present during any emission tests and shall be notified at least 2 weeks prior to the testing. Emissions testing must be conducted within 30 days of startup, or 60 days from equipment shipment.

Misuse, abuse, operating outside the stated parameters, and/or water, oil, or hydrocarbons will void the emissions expectation. C&W DustTech shall not be held responsible for any failures or excess emissions due to upset operating conditions.

This emissions expectation is contingent upon C&W DustTech receiving a process dust sample for testing, analysis, and approval. Such testing could indicate another filter media as a more suitable choice. The expected emissions are also contingent upon an inlet grain loading acceptable to C&W DustTech. Under no circumstances will C&W DustTech be liable or responsible for incidental or consequential damages.

Don Wier
Engineering Manager

P 817-783-5000 x122
G 800-880-DUST(3878)

cwdusttech.com ◆ LinkedIn

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Silo Dust Collectors That Set the Performance Standard

Most Popular Options:

- Silo Anti-Overfill System
- Pressure Relief Valves and Bin Indicators

Are you seeking a compact, efficient dust collection solution for your rugged application? Look no further than C&W DustTech's Silo Dust Collection Systems. Designed with pulse jet or mechanical shaking technologies, our Silo Collectors are custom engineered to outperform in industries such as Ready-Mix Concrete, Cement Production, Mining and Minerals, and more.

Whether your application requires a Low-Profile Round (LPR), Cartridge Pulse (CP) or a Shaker (SK) collector, our team of experts is committed to specifying the most effective Silo Dust Collector for your operational needs.

Silo Dust Collector Features and Benefits

- **Easy to Maintain:** Toolless exchange of filter media – top entry (CP and LPR) or side entry (SK) for clean side filter exchange.
- **Filtration Efficiency:** 99.99% filtration efficiency. *
- **Reliable, Easy to Operate:** Solid state adjustable timer with LED display or a gentle, reliable mechanical shaker (SK-Series only).
- **Long Lasting, Durable:** 12-gauge, heavy duty steel construction.

At Standard Test Conditions



800.880.DUST (3878) | cwdusttech.com | 6933 Shelmor Road Alvarado, TX 76009

Low Profile Round (LPR-Series)

C&W's Low Profile Round (LPR) Silo Dust Collectors deliver a compact footprint, coupled with user-friendly pulse jet technology and cartridge filters to provide a durable dust collection solution. The LPR-Series features a low-profile design and pop in-out filter media exchange that requires no tools and eliminates the need to remove blow pipes.

The LPR can also expand to higher capacities without having to replace the entire unit, housing anywhere from four to eight cartridges. Consider optimizing your unit with a flow switch, one of our most popular add-ons, to help detect the flow of air through the silo and automatically trigger the cleaning cycle on and off.



Additional Features and Benefits

- **Efficiency:** 99.99% filtration efficiency with vertical, wide-pleat cartridges.
- **User Friendly:** Pop in-out filter media exchange with no tools or need to remove blow pipes.

Available Options

- Automatic On/Off Flow Switch
- Minihelic Gauge
- Special Adaptable Mounting Flange
- Air Tank Auto-Drain

Cartridge Pulse (CP-Series)

Built to control various levels of fugitive dust, our Cartridge Pulse Silo Dust Collector ensures cleaner work environments for maximum productivity. This traditional collector leverages our highly efficient and effective pulse jet cleaning technology to capture and manage a range of particulates to be re-introduced back into the process, or disposed. Built to withstand the most rugged environments, these units include an inlet air regulator and moisture separator, and test ports to monitor filter media to ensure ongoing performance.

Our weigh batcher collectors (CP-35, CP-70, CP-88) seamlessly integrate into your Ready-Mix Concrete or Cement Production operation. These collectors effectively capture dust, release clean air back into the environment and return materials directly to the weigh batcher.

Additional Features and Benefits

- **Efficiency:** 99.99% filtration efficiency with vertical, wide-pleat cartridges.
- **Performance:** Inlet air regulator and moisture separator.



Available Options

- Pressure Switch for Automatic Cleaning
- Minihelic Gauge
- Custom Designs and Sizes
- Special Mounting Flange for Adapting to Existing Flange
- Blower Packages, Standard or Custom-Build
- Special Filter Media

Shaker Silo (SK-Series)

The Shaker Series Silo Collector is specifically designed to operate without compressed air, making it the ideal solution for sub-zero temperatures. Not susceptible to freezing in cold weather or moist applications, the collector is equipped with a ¼ horse power 115v motorized shaker cleaning system. The mechanical shaker provides a thorough cleaning of the filter media to provide customers with a high-performing, durable and user-friendly dust control solution.

Additional Features and Benefits

- **Efficiency:** 99.99% filtration efficiency and polyester filter media.
- **Greater Temperature Range:** Will not freeze in sub-zero weather.
- **Performance:** Handles up to 1200 CFM.

Available Options

- **Silo Mounting Flange:** Available in 6" & 12" heights, or an angle flange for sloped silos.
- **Blower Package:** 2 or 3 HP blowers offering 850-1200 CFM.
- **Automatic Controls:** Timer controlled automatic off.



Additional Services & Support

We support our customers with a range of specialized services to deliver a solution that exceeds expectations, including:

- Customized Layouts
- Startup, Maintenance and Training
- Professional Consultation
- Ongoing Aftermarket Part Support
- Air Permit Calculations
- Airflow Design Engineering and Performance Software

Need a Full Silo Dust Collection System?

Depending on your operation, needs and regulatory environment, utilizing a complete dust collection system can help you maximize production efficiencies. Our systems include:

- Ducting
- Dust Collector
- Cleaning System
- Recycle Systems
- Additional accessories include: hoods, shrouds, slump masters, anti-overfill systems, etc.

Contact us at sales@cwdusttech.com to learn about our customized dust collection system options and package offerings.

LPR-Series

	LPR-4-S	LPR-6-S	LPR-8-S
Total Filtration Area (Sq. Ft.)	210	315	420
Number of Cartridges	4	6	8
Cartridge Size	8" X 39	8" X 39	8" X 39
Air To Cloth Ratio	5.57	5.57	5.57
Overall Height (Includes Mounting Flange)	72"	72"	72"
Flange Diameter	44" o.d	44" o.d	44" o.d
Approx. Weight (Lbs.)	670	695	720
Compressed Air Required (CFM)	3	3	3
Max CFM Recommended*	1,170	1,760	2,340
Min. Design Efficiency**	99.99%	99.99%	99.99%
Cleaning Mechanism	Pulse Jet	Pulse Jet	Pulse Jet
**CFM shown for typical application – unique application may change CFM*			
**At standard test conditions*			

CP-Series

	CP-35	CP-70	CP-88	CP-1335S	CP-2000S	CP-2665S	CP-3335S
Total Filtration Area (Sq. Ft.)	45	90	90	210	315	420	525
Number Of Cartridges	2	4	4	4	6	8	10
Air To Cloth Ratio	4.78	4.78	4.78	6.36	6.35	6.35	6.35
Cartridge Size	8" x 19"	8" x 19"	8" x 19"	8" x 39"	8" x 39"	8" x 39"	8" x 39"
Static Pressure Drop	6" W.C	6" W.C	6" W.C	6" W.C	6" W.C	6" W.C	6" W.C
Compressed Air Req. (CFM)	2	2	2	2	2	3	4
CFM Recommended	216	432	432	1335	2000	2665	3335
Min. Design Efficiency*	99.99%	99.99%	99.99%	99.99%	99.99%	99.99%	99.99%
Cleaning Mechanism	Pulse Jet	Pulse Jet	Pulse Jet	Pulse Jet	Pulse Jet	Pulse Jet	Pulse Jet
**At standard test conditions*							

SK-Series

	SK250-436
Total Filtration Area (Sq. Ft)	250
Number Of Bags	36
Ibag Size (Diameter X Length)	4" x 78"
Overall Height	7' 6"
Flange Width	38"
Flange Length	38"
Approx. Weight (Lbs.)	500
Cfm Recommended	1200
Air To Cloth Ratio (ACFM/Sq. Ft.)	4.8
Min. Design Efficiency*	99.99%
Cleaning Mechanism	1/4 Hp 115v Single Phase Motorized Shaker

**At standard test conditions*

C&W DustTech
P.O. Box 908 • Crowley, TX 76036
817.783.5000 tel • 817.783.2353 fax
info@cwdusttech.com • www.cwdusttech.com

Air Permit Work Sheet for C&W Dust Collector

Dust Collector Model No.	CP-LPR-8-S	
Type of Collector	Silo	
Cleaning Mechanism	pulse jet w/ adjustable timer	
Fan Included	No	
Fan Power	na	hp
Collector Flow Rate	2,340	acfm
Filter Material	Spun Bond polyester	
Filter Efficiency	99.99	
Filter Media Max Pressure Drop	12	in h_2o
Total Area of Filter Media	356	sqft
Nominal Filter Diameter	8	in
Nominal Filter Length	3.25	ft
Quantity of Filters	8	
Number of Compartments	1	
Number of Filters per Compartment	8	
Filtering Velocity	6.57	acfm / ft^2 of cloth

Maximum concrete production	300	yds / hr
Number of fill lines	0	
Application Flow Rate	2,340	acfm
Type of Particulate Controlled	1. cement	
Name of Source(s) or Equipment being Controlled	01.CEMENT DELIVERY TO SILO	
Total number of hours of operation per year	3,000	hr / yr

	PM inlet		PM outlet	
Particulate Grain Loading	0.00299	grains / scf	0.000000299	grains / scf
Particulate Emissions	0.06000	lbs / hr	0.0000060	lbs / hr
Particulate Emissions	0.09000	tons / yr	0.0000090	tons / yr

Outlet Area	0.52	ft^2
Outlet Velocity	75.00	ft / s

Reverse Air

RA-Series Dust Collectors









Save time during installation, we offer snap together ducting packages

C&W DustTech

1-800-880-DUST
www.cwdusttech.com
parts@cwdusttech.com
sales@cwdusttech.com

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Dust Settles. We Don't.

RA-Series Central Dust Collectors

General Information

C&W's Reverse Air technology provides an effective way to reverse the harmful effects of dust pollution. The RA-Series of central dust collectors offers proven technology and superior design for your dust control needs. The RA dust collectors are the most durable collectors available, in addition to using only a small amount of compressed air.

Engineered by dust control specialists, the RA-Series combines user-friendliness with exceptional performance.

Benefits	Features:
Easy to Maintain	Tool-less Exchange of Filter Media
	Top Entry for Clean Side Filter Exchange
Efficiency	99.9% Filtration Efficiency* * At Standard Test Conditions
	Felt Polyester Bags
Efficiency, Compact	Snap-in Bags
Performance	Mini-helic Gauge
	Hopper Vibrator
Reliable, Easy to Operate	Solid State Adjustable Timers w/ LED Display
Long-Lasting, Durable	10 Gauge, Cambered Steel Construction
Safety, OSHA-Compliant	Ladders, Platforms, and Handrails

Options

- Manual or Automatic Recycle Systems
- Custom Shrouds and Snorkels
- Silo Anti-Overfill System
- Screw Conveyor with "V" Hopper
- Available in Mobile Units
- Additional Services:
  - Turn-Key Installations
  - Customized Layouts
  - Start-up and Maintenance Training
  - Professional Consultation



Automatic Recycle System



RA-500 offering 25,000 CFM

Specs



Units also available in portable package!



Specifications	RA-120	RA-140	RA-170	RA-200	RA-280	RA-340
Total Filtration Area (sq. ft.)	955	1433	1734	2148	2865	3468
Number of Bags	48	72	72	108	144	144
Bag Length	114"	114"	138"	114"	114"	138"
Overall Height	21'6"	23'8"	25'8"	23'8"	25'4"	27'4"
Overall Width	8'	10'4"	10'4"	10'4"	10'7"	10'7"
Overall Length	9'2"	9'2"	9'2"	11'	17'5"	17'5"
Approx. Weight (lbs.)	5,600	7,200	8,200	9,200	10,500	12,400
Air to Cloth Ratio (ACFM/Ft.²)	5.2	4.54	4.61	4.66	4.54	4.33
Blower Horsepower (optional)	10	10	15	20	25	25
Blower CFM	5,000	6,500	8,000	10,000	13,000	15,000
# of Compartments	2	2	2	2	4	4
Min. Design Efficiency*	99.9%*	99.9%*	99.9%*	99.9%*	99.9%*	99.9%*
Cleaning Mechanism	Reverse Air	Reverse Air	Reverse Air	Reverse Air	Reverse Air	Reverse Air

*At Standard Test Conditions

C&W DustTech

P.O. Box 908 ◇ Crowley, TX 76036 ◇ 1-800-880-DUST ◇ www.cwdusttech.com

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C&W DustTech
P.O. Box 908 • Crowley, TX 76036
817.783.5000 tel • 817.783.2353 fax
info@cwdusttech.com • www.cwdusttech.com

Air Permit Work Sheet for C&W Dust Collector

Dust Collector Model No.	RA200	
Type of Collector	Central	
Cleaning Mechanism	reverse air w/ adjustable timer	
Fan Included	Y	
Fan Power	20.0	hp
Collector Flow Rate	10,000	acfm
Filter Material	100 % polyester felt	
Filter Efficiency	99.90	
Filter Media Max Pressure Drop	6	in h_2o
Total Area of Filter Media	2,148	sqft
Nominal Filter Diameter	8	in
Nominal Filter Length	9.50	ft
Quantity of Filters	108	
Number of Compartments	2	
Number of Filters per Compartment	54	
Filtering Velocity	4.66	acfm / ft^2 of cloth

Maximum concrete production	300	yds / hr
Number of fill lines	0	
Application Flow Rate	10,000	acfm
Type of Particulate Controlled	3. cement & flyash	
Name of Source(s) or Equipment being Controlled	04.TRUCK MIX LOADING (SHROUD)	
Total number of hours of operation per year	3,744	hr / yr

	PM inlet		PM outlet	
Particulate Grain Loading	1.10250	grains / scf	0.001102500	grains / scf
Particulate Emissions	94.50000	lbs / hr	0.0945000	lbs / hr
Particulate Emissions	176.90400	tons / yr	0.1769040	tons / yr

Outlet Area	3.45	ft^2
Outlet Velocity	48.31	ft / s

APPENDIX E. COMPLIANCE CERTIFICATION

ARIZONA DEPARTMENT

OF

ENVIRONMENTAL QUALITY

1110 West Washington Street Phoenix, Arizona 85007

(602) 771-2300 www.azdeq.gov

Air Permit Compliance Certification

Company: CALPORTLAND COMPANY

LTF #: 85424

Facility: CALPORTLAND - RILLITO CEMENT PLANT

Reporting Frequency: 10/01/2025 - 03/31/2026

Compliance Certification Questions

Master Question: Did you operate in this reporting period?

Answer: Yes

Excess emissions/ Permit Deviation Reports:

Date Submitted	Type	Date of Discovery	Status
02/06/2026	EXCESS EMISSIONS	02/05/2026	Review Complete
01/08/2026	PERMIT DEVIATION	01/07/2026	Review Complete
11/07/2025	EXCESS EMISSIONS	11/06/2025	Review Complete

Do you have any excess emission / deviation to report?

Answer: No

Question #	Question Text	Provided details
1	ATTACHMENT A.XII.A General Provisions, Excess Emissions, Permit Deviations, and Emergency Reporting Were there any excess emission events during the compliance period?	Answer: YES
1.1	ATTACHMENT A.XII.A General Provisions, Excess Emissions, Permit Deviations, and Emergency Reporting Were the excess emission notifications and reports submitted promptly?	Answer: Continuous Method: Reporting Additional Remarks: Excess Emissions Report ID 161131 was submitted on 11/07/2025. Excess Emissions Report ID 172089 was submitted on 02/06/2026. Supporting Documents Needed: No Supporting Documents Provided:No
2	ATTACHMENT A.XII.B General Provisions, Excess Emissions,	Answer: YES

	Permit Deviations, and Emergency Reporting Were there any permit deviations from permit requirements, including those attributable to upset conditions as defined in the permit?	
2.1	ATTACHMENT A.XII.B General Provisions, Excess Emissions, Permit Deviations, and Emergency Reporting Were the permit deviation reports submitted within 2 working days?	Answer: Intermittent Explain Why: One of the two main process thermocouples was found to be errant and did not yield any alarm to the control room operator. In order to correct the issue, multiple step alarms have been put in place to avoid temperature excursions. Additional training to operators regarding temperature limits and protocols will be implemented. Method: Reporting Additional Remarks: Permit Deviation Report ID 165750 was submitted 01/08/2026. Supporting Documents Needed: No Supporting Documents Provided:No
3	ATTACHMENT A.XII.B General Provisions, Excess Emissions, Permit Deviations, and Emergency Reporting Were there any permit deviations resulting from upset conditions, which are defined as malfunctions or breakdowns of pollution control equipment, continuous emissions monitoring systems (CEMS), or continuous opacity monitoring systems (COMS)?	Answer: NO
4	ATTACHMENT A.XI.B General Provisions, Excess Emissions, Permit Deviations, and Emergency Reporting Were there any deviations from permit requirements, including those attributable to upset conditions as defined in the permit?	Answer: YES

4.1	ATTACHMENT A.XI.B General Provisions, Excess Emissions, Permit Deviations, and Emergency Reporting Was the deviation from any permit condition identified by Condition I.B.1 of Attachment "B"?	Answer: NO
4.2	ATTACHMENT A.XII.B General Provisions, Excess Emissions, Permit Deviations, and Emergency Reporting Were there any other types of permit deviations?	Answer: NO
5	ATTACHMENT B.I.A.1 Specific Conditions, Facility-Wide Requirements Did the Permittee have on site or on call a person certified in EPA Reference Method 9 or did the Permittee use Alternative Method-082 in place of Method 9 for opacity observations?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: Yes Supporting Documents Provided: Method_9_Certs.pdf
6	ATTACHMENT B.I.B.1 Specific Conditions, Facility-Wide Requirements At the time that the compliance certifications required by Section VII of Attachment “A” are submitted, did the Permittee submit reports of all monitoring activities required by this permit, performed in the same six month period as applies to the compliance certification period?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
7	ATTACHMENT B.I.C Specific Conditions, Facility-Wide Requirements The conditions of Attachment "B" shall apply to equipment identified in Attachment "D" of this Permit. In the event that after the date of permit issuance, the Permittee identifies equipment existing at the plant at the time of permit issuance, but not included in the permit application for this permit, or if the Permittee identifies errors in Attachment "D" of this Permit, did the Permittee follow the appropriate administrative procedures as set forth in Article 3 of Title 18, Chapter 2 of the Arizona Administrative Code to include such	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No

	equipment in the permit or to correct such errors?	
8	ATTACHMENT B.I.D.1, 2 Specific Conditions, Facility-Wide Requirements Did the Permittee not cause, allow, or permit gaseous or odorous materials to be emitted from equipment, operations or premises under its control in such quantities or concentrations as to cause air pollution? Where a stack, vent or other outlet is at such a level that fumes, gas mist, odor, smoke, vapor or any combination thereof constituting air pollution is discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent, or other outlet by the owner or operator thereof to a degree that will adequately dilute, reduce or eliminate the discharge of air pollution to adjoining property.	Answer: Continuous Method: Parametric Monitoring Continuous Emissions Monitoring System (CEMS) Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
9	ATTACHMENT B.II.B.1.a Specific Conditions, Fugitive Dust Requirements Was opacity of emissions from any fugitive dust non-point source not greater than 40% measured in accordance with 40 CFR 60, Appendix A, Reference Method 9?	Answer: Continuous Method: Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
10	ATTACHMENT B.II.B.1.b Specific Conditions, Fugitive Dust Requirements Did the Permittee not cause or allow visible emissions from low-grade and high-grade limestone storage piles in excess of 20 percent opacity?	Answer: Continuous Method: Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
11	ATTACHMENT B.II.B.1.c Specific Conditions, Fugitive Dust Requirements Did the Permittee employ reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne? Specific controls are listed in Conditions II.B.1.c(1)	Answer: Continuous Method: Other Additional Remarks: Facility Dust Control Plan

	through II.B.1.c(8) of Attachment “B”.	Supporting Documents Needed: No Supporting Documents Provided:No
12	ATTACHMENT B.II.B.1.d(1) Specific Conditions, Fugitive Dust Requirements Did the Permittee maintain the quarry road between Twin Peaks Road and the quarry entrance in a paved condition?	Answer: Continuous Method: Other Additional Remarks: Facility Dust Control Plan Supporting Documents Needed: No Supporting Documents Provided:No
13	ATTACHMENT B.II.B.1.d(2) Specific Conditions, Fugitive Dust Requirements Did the Permittee maintain the plant road segments paved in 1991, 1992, 1995, and 1996 in a paved condition? Did the Permittee maintain records identifying these paved road segments? These records shall be available to ADEQ on request.	Answer: Continuous Method: Other Additional Remarks: Facility Dust Control Plan Supporting Documents Needed: No Supporting Documents Provided:No
14	ATTACHMENT B.II.B.1.e(1) Specific Conditions, Fugitive Dust Requirements Did the Permittee operate at all times in conformance with the Dust Control Plan approved by the Director? Was the Dust Control Plan designed to achieve a 65% control efficiency for the following road sections: (a) All active roads at the quarry; (b) The unpaved sections of the road from Avra Valley road to Twin Peaks Road; (c) The unpaved sections of the roads from the Canal to Avra Valley Road; and (d) The following active unpaved roads at the cement plant: East Road, West Road, Coal/Coke Storage Area Road, Central Control Road, and Reclaimer Road?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Facility Dust Control Plan Supporting Documents Needed: No Supporting Documents Provided:No
15	ATTACHMENT B.II.B.1.e(2) Specific Conditions, Fugitive Dust Requirements Did the Permittee maintain diagrams of the road sections referenced in Condition II.B.1.e(1) of Attachment "B"?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No

		Supporting Documents Provided:No
16	ATTACHMENT B.II.B.1.f(1) Specific Conditions, Fugitive Dust Requirements Except as provided in Condition II.B.1.f(2) of Attachment "B", and except when permitted to do so by either the Director or the local officer delegated the authority for issuance of open burning permits, did the Permittee not ignite, cause to be ignited, permit to be ignited, or suffer, allow or maintain any open outdoor fire? “Open outdoor fire” means any combustion of combustible material of any type outdoors, in the open where the products of combustion are not directed through a flue. Cutting torches welding, open flames used in the maintenance and repair of stationary or mobile equipment, coal fires, explosives, fuses and blasting agents used in the quarry and torches used to ignite the Kiln 1-4 are not open outdoor fires. “Flue,” as used above, means any duct or passage for air, gases or the like, such as a stack or chimney.	Answer: Continuous Method: Other Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
17	ATTACHMENT B.II.B.2 Specific Conditions, Fugitive Dust Requirements Did the Permittee not cause or permit the airborne diffusion of visible emissions, including fugitive dust, beyond the property boundary line within which the emissions became airborne?	Answer: Continuous Method: Other Operation & Maintenance Plans Additional Remarks: Work Practices, Facility Dust Control Plan Supporting Documents Needed: No Supporting Documents Provided:No
18	ATTACHMENT B.II.B.2.a Specific Conditions, Fugitive Dust Requirements In actual practice, was the airborne diffusion of visible emissions across property lines prevented by appropriately controlling the emissions at the point of discharge, or ceasing entirely the activity or operation which is causing or	Answer: Continuous Method: Other Operation & Maintenance Plans Additional Remarks: Work Practices, Facility Dust Control Plan

	contributing to the emissions? Condition II.B.2.a of Attachment "B" shall not apply when the naturally induced wind speed exceeds 25 miles per hour as estimated by a certified visible emission evaluator using the Beaufort Scale of Wind-Speed Equivalents, or as recorded by a U.S. Weather Bureau Section or a U.S. Government military installation.	Supporting Documents Needed: No Supporting Documents Provided:No
19	ATTACHMENT B.II.B.3.a(1)(a) Specific Conditions, Fugitive Dust Requirements On the days when there is coal unloading activity at the facility, did the Permittee conduct daily two (2) visible emissions surveys of the property boundary line with the Rillito Community, in accordance with EPA Reference Method 22? The surveys shall be conducted during the coal unloading activity that occurs in daylight hours.	Answer: Continuous Method: Other Visible Emission Surveys Additional Remarks: Visible Emissions Observation Plan, Method 22 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
20	ATTACHMENT B.II.B.3.a(1)(b) Specific Conditions, Fugitive Dust Requirements If there is no coal unloading activity, did the Permittee conduct daily two (2) visible emissions survey of the property boundary line with the Rillito Community, in accordance with EPA Reference Method 22? The surveys shall be conducted during daylight hours with a minimum of 4 hours between observations.	Answer: Continuous Method: Other Visible Emission Surveys Additional Remarks: Visible Emissions Observation Plan, Method 22 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
21	ATTACHMENT B.II.B.3.a(2)(a) Specific Conditions, Fugitive Dust Requirements On the days when there is bauxite unloading activity at the facility, did the Permittee conduct a daily visible emissions survey of the closest property boundary line in accordance with EPA Reference Method 22? The survey shall be conducted during the bauxite unloading activity that occurs in daylight hours.	Answer: Continuous Method: Other Visible Emission Surveys Additional Remarks: Visible Emissions Observation Supporting Documents Needed: No Supporting Documents Provided:No

22	ATTACHMENT B.II.B.3.a(2)(b) Specific Conditions, Fugitive Dust Requirements Were the daily visible emission surveys in accordance with EPA Reference Method 22 at the Quarry and the Twin Peaks Rock and Stone aggregate plant conducted during daylight hours only when there is activity at each site?	Answer: Continuous Method: Other Visible Emission Surveys Additional Remarks: Visible Emissions Observation Plan, Method 22 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
23	ATTACHMENT B.II.B.3.a(2)(c) Specific Conditions, Fugitive Dust Requirements For all property boundary lines other than II.B.3.a(1), II.B.3.a(2)(a), and II.B.3.a(2)(b) of Attachment “B”, did the Permittee conduct a daily visible emissions survey during daylight hours in accordance with EPA Reference Method 22?	Answer: Continuous Method: Other Visible Emission Surveys Additional Remarks: Visible Emissions Observation Plan, Method 22 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
24	ATTACHMENT B.II.B.3.a(3) Specific Conditions, Fugitive Dust Requirements If visible emissions related to the Permittee’s operations are observed to cross a property boundary line, did the Permittee report the emissions using the excess emission reporting procedures in Section XI of Attachment “A” of this permit?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
25	ATTACHMENT B.II.B.3.a(4) Specific Conditions, Fugitive Dust Requirements For each daily visible emissions survey required by Conditions II.B.3.a(1) and II.B.3.a(2) of Attachment "B" did the Permittee maintain the following records? (a) Location, date, time of observation; (b) Name of the observer; (c) Results of the observation; (d) If corrective action was necessary, a description of the corrective action	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

26	ATTACHMENT B.II.B.3.b Specific Conditions, Fugitive Dust Requirements Did the Permittee conduct Visible Emissions Observation Procedures at least once each calendar month as per the Visible Emissions Observation Plan approved by the Department, and in accordance with Conditions II.B.3.b(1) through II.B.3.b(6) of Attachment "B"?	Answer: Continuous Method: Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
27	ATTACHMENT B.II.B.3.b(1) Specific Conditions, Fugitive Dust Requirements Did a certified EPA Reference Method 9 observer conduct a visual survey of visible emissions from non-point sources and, where applicable, fugitive emissions in accordance with the Visible Emissions Observation Plan, under representative operating conditions?	Answer: Continuous Method: Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
28	ATTACHMENT B.II.B.3.b(2) Specific Conditions, Fugitive Dust Requirements Did the Permittee keep a record of the name of the observer, the date and time on which the observation was made, the location(s) of the observation, and the results of the observation?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
29	ATTACHMENT B.II.B.3.b(3) Specific Conditions, Fugitive Dust Requirements If the observer sees a plume from a non-point source and, where applicable, fugitive emissions source that on an instantaneous basis appears to exceed the applicable opacity standard, then did the observer, if practicable, take a six-minute EPA Reference Method 9 observation of the plume?	Answer: Continuous Method: Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
30	ATTACHMENT B.II.B.3.b(4) Specific Conditions, Fugitive Dust Requirements If the six-minute opacity of the plume is less than the applicable opacity standard, did the observer make a record of the following? (a) Location, date, and time of the	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No

	observation; (b) The results of the EPA Reference Method 9 observation; and (c) The name of the observer.	Supporting Documents Provided:No
31	ATTACHMENT B.II.B.3.b(5) Specific Conditions, Fugitive Dust Requirements If the six-minute opacity of the plume exceeds the applicable opacity standard, then did Permittee do the following? (a) Adjust or repair the controls or equipment to reduce opacity to below the applicable opacity standard; (b) Record corrective actions; (c) Report as an excess emission in accordance with Section XI of Attachment “A” of this permit; and (d) Conduct a six-minute EPA Reference Method 9 observation reading within 48 hours after taking corrective action. The results of this observation including date, time, name of the observer, and location shall be recorded.	Answer: Continuous Method: Other Recordkeeping Method 9 Opacity Observations Reporting Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
32	ATTACHMENT B.II.B.3.b(6) Specific Conditions, Fugitive Dust Requirements Were there any changes to the Visible Emissions Observation Plan?	Answer: NO
33	ATTACHMENT B.II.B.3.c Specific Conditions, Fugitive Dust Requirements Did the Permittee maintain records of maintenance activities conducted on the paved roads identified in Condition II.B.1.d of Attachment "B"?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
34	ATTACHMENT B.II.B.3.d(1) Specific Conditions, Fugitive Dust Requirements Did the Permittee maintain records of the dates on which any of the following activities were performed and all control measures which were employed? (a) Constructing, altering, or demolishing a building or its appurtenances; (b) Constructing or reconstructing a roadway, driveway, or parking area. Construction and reconstruction activities at	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

	the quarry and the aggregate plant are not subject to this condition.	
35	ATTACHMENT B.II.B.3.d(2) Specific Conditions, Fugitive Dust Requirements Did the Permittee document deviations from the control measures used for the following activities by recording the date, time, and reason for the deviation? (a) When moving or excavating earth, (b) When using parking lots or driveways, and (c) When engaging in the activities described in Conditions II.B.1.c(1) through II.B.1.c(8) of Attachment "B".	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
36	ATTACHMENT B.II.B.3.e, f Specific Conditions, Fugitive Dust Requirements Did the Permittee maintain records of each instance of operation not consistent with the current Dust Control Plan? Each such instance shall be considered a permit deviation in accordance with Section XI of Attachment “A”.	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
37	ATTACHMENT B.II.B.4 Specific Conditions, Fugitive Dust Requirements Did the Permittee conduct annual performance test in accordance with Method 9 of 40 CFR 60 Appendix A to determine compliance with the 20% opacity limit for Low grade and high grade lime stone storage piles?	Answer: Continuous Method: Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
38	ATTACHMENT B.III.B.1 Specific Conditions, Rock Crushing And Screening Activities Did the Permittee not process more than 800,000 tons of rocks in the Twin Peak Rock crushing and Screening plant in any rolling 12-month period?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
39	ATTACHMENT B.III.B.2 Specific Conditions, Rock Crushing And Screening Activities Did the Permittee install, calibrate, maintain, and operate	Answer: Continuous Method: Other

	monitoring devices which can be used to determine daily the process weight of sand, gravel or crushed stone produced? The weighing devices shall have an accuracy of plus or minus 5 percent over their operating range. This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.	Operation & Maintenance Plans Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
40	ATTACHMENT B.III.B.3 Specific Conditions, Rock Crushing And Screening Activities Did the Permittee demonstrate compliance with the Condition III.B.2 of Attachment “B” by conducting, and maintaining record of, annual calibration checks?	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
41	ATTACHMENT B.III.B.4 Specific Conditions, Rock Crushing And Screening Activities Did the Permittee keep records of the rolling 12-month total weight of rock processed?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: Yes Supporting Documents Provided: TwinPeaks_MonthlyRollingProduction_March2026.xlsx
42	ATTACHMENT B.III.C Specific Conditions, Rock Crushing And Screening Activities The next part is applicable to the affected facilities in Section III.A of Attachment "B" constructed on or before August 31, 1983 or exempt from the requirements of NSPS Subpart OOO. Click "Yes" to continue if the affected facilities were operated.	Answer: YES
42.1	ATTACHMENT B.III.C.2.a(1) Specific Conditions, Rock Crushing And Screening Activities Did the Permittee not cause, allow or permit the discharge of	Answer: Continuous Method: Other

	particulate matter into the atmosphere, except as fugitive emissions, in any one hour from any gravel or crushed stone processing plant in total quantities in excess of the amounts calculated by one of the following equations? (a) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable particulate emissions shall be determined by the following equation: E = 3.59 * P^0.62 Where: E = the maximum allowable emissions rate in pounds-mass per hour. P = the process weight rate in tons-mass per hour. (b) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation: E = 17.31 * P^0.16 Where “E” and “P” are defined as in Condition III.C.2.a(1)(a) of Attachment "B".	Additional Remarks: Work Practices, Emission Calculations Supporting Documents Needed: No Supporting Documents Provided:No
42.2	ATTACHMENT B.III.C.2.a(2) Specific Conditions, Rock Crushing And Screening Activities Did the Permittee not cause to be discharged into the atmosphere from any gravel or stone crushing processes any emissions greater than 20 percent opacity from any plume of effluent?	Answer: Continuous Method: Visible Emission Surveys Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
42.3	ATTACHMENT B.III.C.2.b(1) Specific Conditions, Rock Crushing And Screening Activities Did the Permittee operate the following air dust collectors in a manner consistent with good air pollution control practice for minimizing particulate matter emissions from the process sources subject to this Section III of Attachment “B”? B2-DC1, B3-DC1, B5-DC1, B5-DC2, B5-DC3, B7-DC1, B8-DC1, B8-DC2, B9-DC1, B9-DC2, B9-DC3, B9-DC5, C2-DC1 This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from	Answer: Continuous Method: Other Operation & Maintenance Plans Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No

	upset of operations.	
42.4	ATTACHMENT B.III.C.2.b(2) Specific Conditions, Rock Crushing And Screening Activities Was spray bar pollution control utilized in accordance with "EPA Control of Air Emissions From Process Operations in the Rock Crushing Industry" (EPA 340/1-79-002), and "Wet Suppression System" (pages 15-34, amended as of January 1979 (and no future amendments or editions)), as incorporated herein by reference and on file with the Office of the Secretary of State, with placement of spray bars and nozzles as required by the Director to minimize air pollution?	Answer: Continuous Method: Other Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
42.5	ATTACHMENT B.III.C.2.b(3) Specific Conditions, Rock Crushing And Screening Activities Did the Permittee control fugitive emissions from process sources subject to this Part in accordance with the methods listed in Condition II.B.1.c of Attachment "B"?	Answer: Continuous Method: Visible Emission Surveys Other Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
42.6	ATTACHMENT B.III.C.2.c(1) Specific Conditions, Rock Crushing And Screening Activities Did the Permittee maintain a record of daily production rates of gravel or crushed stone produced?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
42.7	ATTACHMENT B.III.C.2.c(2) Specific Conditions, Rock Crushing And Screening Activities Did a certified Method 9 observer conduct the periodic opacity monitoring method specified in Condition I.A of Attachment "B" on a monthly basis from all the stacks while they are in operation?	Answer: Continuous Method: Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No

42.8	ATTACHMENT B.III.C.2.d(1) Specific Conditions, Rock Crushing And Screening Activities To demonstrate compliance with the opacity standards, did the Permittee conduct performance tests on the following dust collectors once during the permit term in accordance with EPA Reference Method 9 of 40 CFR Part 60, Appendix A? B2-DC1, B3-DC1, B5-DC1, B5-DC2, B5-DC3, B7-DC1, B8-DC1, B8-DC2, B9-DC1, B9-DC2, B9-DC3, B9-DC5, C2-DC1	Answer: Continuous Method: Performance/Source Testing Additional Remarks: Opacity testing was conducted on 12/18/2025. Supporting Documents Needed: No Supporting Documents Provided:No
42.9	ATTACHMENT B.III.CC.2.d(2) Specific Conditions, Rock Crushing And Screening Activities To demonstrate compliance with Condition III.C.2.a(1) of Attachment “B”, did the Permittee conduct performance test once during the permit term on the following dust collectors in accordance with EPA Reference Method 5 of 40 CFR 60, Appendix A? a) Dust collectors B2-DC1 and B3-DC1 b) Any one of the following dust collectors: B5-DC1, B5-DC2, B5-DC3, and B7-DC1 c) One of the following dust collectors: B9-DC2 and B9-DC3 d) Any one of the following dust collectors: B8-DC1, B8-DC2, B9-DC1, B9-DC5 and C2-DC1.	Answer: Continuous Method: Performance/Source Testing Additional Remarks: PM testing of TP-DC1 was conducted on 12/18/2025. PM testing of the remaining dust collectors was conducted between 03/24/2026 and 03/26/2026. Supporting Documents Needed: No Supporting Documents Provided:No
43	ATTACHMENT B.III.D Specific Conditions, Rock Crushing And Screening Activities The next part is applicable to the affected facilities in Section III.A of Attachment "B" that were constructed, modified, or reconstructed after August 31, 1983 but before April 22, 2008. Click "Yes" to continue if the affected facilities were operated.	Answer: YES
43.1	ATTACHMENT B.III.D.2.a(1) Specific Conditions, Rock Crushing And Screening Activities Did the Permittee not cause to be discharged into the atmosphere from any affected facility any stack emissions which: (a) Contain particulate matter in excess of 0.05 grams/dry standard cubic meter (0.022 grains per dry standard cubic foot); and (b) Exhibit greater than 7 percent	Answer: Continuous Method: Performance/Source Testing Other Additional Remarks: Work Practices, Visible Emissions Observation Plan

	opacity?	Supporting Documents Needed: No Supporting Documents Provided:No
43.2	ATTACHMENT B.III.D.2.a(2) Specific Conditions, Rock Crushing And Screening Activities Did the Permittee not allow to be discharged into the atmosphere from any grinding mill, screening operation, bucket elevator, transfer point on belt conveyors, bagging operation, storage bin, enclosed truck or railcar loading stations, or from any other affected facility any fugitive emissions (including emissions escaping capture systems) which exhibit visible emissions greater than 10 percent opacity?	Answer: Continuous Method: Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
43.3	ATTACHMENT B.III.D.2.a(3)-(4) Specific Conditions, Rock Crushing And Screening Activities Did the Permittee not allow to be discharged into the atmosphere from any crusher at which a capture system is not used, any fugitive emissions which exhibit visible emissions greater than 15 percent opacity? Transfer points to a stockpile and truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher are exempt from the requirements of 40 CFR 60 Subpart OOO.	Answer: Continuous Method: Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
43.4	ATTACHMENT B.III.D.2.b(1) Specific Conditions, Rock Crushing And Screening Activities At all times, including periods of startup, shutdown, and malfunction, did the Permittee, to the extent practicable, maintain and operate all affected facilities including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing air emissions? Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Director, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance	Answer: Continuous Method: Other Operation & Maintenance Plans Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No

	procedures, and inspection of the source.	
43.5	ATTACHMENT B.III.D.2.b(2) Specific Conditions, Rock Crushing And Screening Activities Were water spray bars or equivalent control equipment used on all crushers and screens whenever the equipment is operating or material must be adequately wet to minimize visible emissions to the extent practical? This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.	Answer: Continuous Method: Other Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
43.6	ATTACHMENT B.III.D.2.c Specific Conditions, Rock Crushing And Screening Activities Did a certified Method 9 observer conduct the periodic opacity monitoring method specified in Condition I.A of Attachment “B” on a monthly basis from the affected stacks while they are in operation?	Answer: Continuous Method: Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
43.7	ATTACHMENT B.III.D.2.d(1) Specific Conditions, Rock Crushing And Screening Activities Did the Permittee furnish to the Director and Administrator for all new facilities that were not previously permitted a written notification as follows? (a) A notification of the date construction or reconstruction (as defined under 40 CFR 60.15 and 60.673) of the permitted facility is commenced postmarked no later than 30 days after such date. (b) A notification of the actual date of initial startup of a permitted facility postmarked within 15 days after such date.	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
43.8	ATTACHMENT B.III.DD.2.d(2) Specific Conditions, Rock Crushing And Screening Activities Did the Permittee furnish to the Director a written notification of any physical or operational change to an affected facility which may increase the emission rate of any	Answer: Continuous Method: Reporting Supporting Documents Needed: No

	air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in 40 CFR §60.14(e)? Was the notice postmarked 60 days or as soon as practicable before the change is commenced and did the notice include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change? The Director may request additional relevant information subsequent to this notice.	Supporting Documents Provided:No
44	ATTACHMENT B.III.E Specific Conditions, Rock Crushing And Screening Activities The next part is applicable to the affected facilities in Section III.A of Attachment "B" that are constructed, modified, or reconstructed on or after April 22, 2008. Click "Yes" to continue if the affected facilities were operated.	Answer: YES
44.1	ATTACHMENT B.III.E.2.a Specific Conditions, Rock Crushing And Screening Activities Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, did the Permittee not cause to be discharged into the atmosphere from affected facilities with capture systems used to capture and transport particulate matter to a control device any stack emissions that exceed 0.032 g/dscm (0.014 gr/dscf)? Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of Condition III.E.2.a of Attachment “B”.	Answer: Continuous Method: Performance/Source Testing Supporting Documents Needed: No Supporting Documents Provided:No
44.2	ATTACHMENT B.III.E.2.b Specific Conditions, Rock Crushing And Screening Activities Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, did the Permittee not	Answer: Continuous Method: Method 9 Opacity Observations Visible Emission Surveys

	cause to be discharged into the atmosphere from crushers at which a capture system is not used any fugitive emissions that exhibit greater than 12% opacity? Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of Condition III.E.2.b of Attachment "B".	Supporting Documents Needed: No Supporting Documents Provided:No
44.3	ATTACHMENT B.III.E.2.c Specific Conditions, Rock Crushing And Screening Activities Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, did the Permittee not cause to be discharged into the atmosphere from grinding mills, screening operations, bucket elevators, transfer points on belt conveyors, bagging operations, storage bins, enclosed truck or railcar loading stations or from any other affected facility, except as provide in Condition III.E.2.b of Attachment "B", any fugitive emissions that exhibit greater than 7% opacity? Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of Condition II.E.2.c of Attachment "B".	Answer: Continuous Method: Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
44.4	ATTACHMENT B.III.E.4.a Specific Conditions, Rock Crushing And Screening Activities At all times, did the Permittee, to the extent practicable, utilize wet suppression on the affected facilities to minimize particulate matter emissions and comply with the applicable emission limitations and standards of Condition III.E.2 of Attachment "B"? Wet suppression options include water sprays, surfactant use, water jets, foggers, inherent moisture content (including moisture from upstream water sprays), or other equivalent control methods.	Answer: Continuous Method: Other Operation & Maintenance Plans Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
44.5	ATTACHMENT B.III.E.4.b Specific Conditions, Rock Crushing And Screening Activities Did the Permittee operate the following air dust collectors in	Answer: Continuous Method: Operation & Maintenance Plans

	a manner consistent with good air pollution control practice for minimizing particulate matter emissions from the process sources subject to this Section III of Attachment “B”? B7-DC1, B11-DC1 This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.	Supporting Documents Needed: No Supporting Documents Provided:No
44.6	ATTACHMENT B.III.E.5.a Specific Conditions, Rock Crushing And Screening Activities Except as specified in Condition III.E.5.b of Attachment "B", did the Permittee conduct quarterly 30-minute visible emissions inspections using EPA Method 22 (40 CFR part 60, appendix A-7) for any affected facility that uses a baghouse to control emissions?	Answer: YES
44.6.1	ATTACHMENT B.III.E.5.a Specific Conditions, Rock Crushing And Screening Activities Except as specified in Condition III.E.5.b of Attachment "B", did the Permittee conduct quarterly 30-minute visible emissions inspections using EPA Method 22 (40 CFR part 60, appendix A-7) for any affected facility that uses a baghouse to control emissions?	Answer: Continuous Method: Other Additional Remarks: Method 22 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
44.6.2	ATTACHMENT B.III.E.5.a Specific Conditions, Rock Crushing And Screening Activities Did the Permittee record each Method 22 (40 CFR part 60, appendix A-7) test, including the date and any corrective actions taken, in the logbook required under Condition III.E.5.e of Attachment "B"?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
44.7	ATTACHMENT B.III.E.5.b Specific Conditions, Rock Crushing And Screening Activities As an alternative to the periodic Method 22 (40 CFR part 60, appendix A-7) visible emissions inspections specified in	Answer: NO

	Condition III.E.5.a of Attachment "B", did the Permittee use a bag leak detection system for any affected facility that uses a baghouse to control emissions?	
44.8	ATTACHMENT B.III.E.5.c Specific Conditions, Rock Crushing And Screening Activities For any affected facility that uses wet suppression to control emissions, did the Permittee perform monthly inspections to check that water is flowing to the discharge spray nozzles in the wet suppression system?	Answer: Continuous Method: Operation & Maintenance Plans Supporting Documents Needed: No Supporting Documents Provided:No
44.9	ATTACHMENT B.III.E.5.c Specific Conditions, Rock Crushing And Screening Activities If the Permittee finds that water is not flowing properly during an inspection of the water spray nozzles, did the Permittee initiate corrective action within 24 hours and complete corrective action as expediently as practical?	Answer: Continuous Method: Other Additional Remarks: Work Practices, Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
44.10	ATTACHMENT B.III.E.5.c Specific Conditions, Rock Crushing And Screening Activities Did the Permittee record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken, in the logbook required under Condition III.E.5.e of Attachment “B”?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
44.11	ATTACHMENT B.III.E.5.e Specific Conditions, Rock Crushing And Screening Activities Did the Permittee record each periodic inspection required under Condition III.E.5.a or III.E.5.c of Attachment “B”, including dates and any corrective actions taken, in a logbook (in written or electronic format)? The Permittee must keep the logbook onsite and make hard or electronic copies (whichever is requested) of the logbook available to the Director upon request.	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

44.12	ATTACHMENT B.III.E.5.e Specific Conditions, Rock Crushing And Screening Activities Did the Permittee conduct a performance test required by this section during this compliance period?	Answer: NO
44.13	ATTACHMENT B.III.E.6.c Specific Conditions, Rock Crushing And Screening Activities Did the Permittee determine compliance with the PM standards in Condition III.E.2.a of Attachment "B" as follows? Method 5 of appendix A-3 of 40 CFR 60 or Method 17 of appendix A-6 of 40 CFR 60 shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5 (40 CFR part 60, appendix A-3), if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter.	Answer: Continuous Method: Performance/Source Testing Supporting Documents Needed: No Supporting Documents Provided:No
44.14	ATTACHMENT B.III.E.6.b & d Specific Conditions, Rock Crushing And Screening Activities Was this compliance period within 60 days after achieving the maximum production rate at which the affected facility will be operated but no later than 180 days after initial startup of the facility?	Answer: NO
44.15	ATTACHMENT B.III.E.6.e & f Specific Conditions, Rock Crushing And Screening Activities Has the Permittee conducted the performance test required in Condition III.E.6.d of Attachment “B” ?	Answer: YES
44.15.1	ATTACHMENT B.III.E.6.e & f Specific Conditions, Rock Crushing And Screening Activities Did the Permittee conduct a repeat performance test according to 40 CFR 60.11 and 40 CFR 60.675 within 5 years	Answer: Continuous Method: Performance/Source Testing

	from the previous performance test required in Condition III.E.6.d of Attachment “B” for fugitive emissions from affected facilities without water sprays? Note: If an affected facility relies on water carryover from upstream water sprays to control fugitive emissions, then that affected facility is exempt from the 5-year repeat testing requirement specified in Condition III.E.6.e of Attachment "B" provided that the affected facility meets the criteria in Condition III.E.6.f(1)&(2) of Attachment “B”.	Additional Remarks: Dust Collectors were tested on December 18, 2025. A repeat performance test is not due until 2031. Supporting Documents Needed: No Supporting Documents Provided:No
44.16	ATTACHMENT B.III.E.6.g Specific Conditions, Rock Crushing And Screening Activities In determining compliance with the particulate matter standards in Conditions III.E.2.b and III.E.2.c of Attachment "B", did the Permittee use Method 9 of Appendix A-4 of 40 CFR 60 and the procedures in 40 CFR 60.11, with the additions as listed in Condition III.E.6.g of Attachment "B"	Answer: Continuous Method: Performance/Source Testing Supporting Documents Needed: No Supporting Documents Provided:No
44.17	ATTACHMENT B.III.E.6.h Specific Conditions, Rock Crushing And Screening Activities When determining compliance with Conditions III.E.2.b and III.E.2.c of Attachment "B" was the duration of the Method 9 (40 CFR 60, Appendix A-4) observations 30 minutes (five 6-minute averages) used? Compliance with Conditions III.E.2.b and III.E.2.c of Attachment "B" must be based on the average of the five 6-minute averages.	Answer: Continuous Method: Performance/Source Testing Supporting Documents Needed: No Supporting Documents Provided:No
45	ATTACHMENT B.IV.B.1.a Specific Conditions, Portable Grizzly Screen For Processing Iron/Clinker And Coke Processing Equipment Did the Permittee not cause, suffer, allow or permit the discharge of particulate matter into the atmosphere except as fugitive emissions in any one hour from any process source, in total quantities in excess of the amounts calculated by the equations set forth below? (1) For process sources having a process weight rate of 60,000 pounds per	Answer: Continuous Method: Other Additional Remarks: Facility Procedures, Emissions Calculations Supporting Documents Needed: No Supporting Documents Provided:No

	hour (30 tons per hour) or less, the maximum allowable particulate emissions shall be determined by the following equation: E = 3.59 * P^0.62 Where: E = the maximum allowable emissions rate in pounds-mass per hour. P = the process weight rate in tons-mass per hour. (2) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation: E = 17.31 *P^0.16 Where “E” and “P” are defined as in Condition IV.B.1.a(1) above.	
46	ATTACHMENT B.IV.B.1.b Specific Conditions, Portable Grizzly Screen For Processing Iron/Clinker And Coke Processing Equipment Was the opacity of any plume or effluent from any process source subject to the provisions of Section IV of Attachment "B" not greater than 20%?	Answer: Continuous Method: Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
47	ATTACHMENT B.IV.B.2 Specific Conditions, Portable Grizzly Screen For Processing Iron/Clinker And Coke Processing Equipment Did a certified Method 9 observer conduct the periodic opacity monitoring method specified in Condition I.A of Attachment “B” on a monthly basis from the grizzly system, when in operation?	Answer: Continuous Method: Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
48	ATTACHMENT B.V.B.1 Specific Conditions, Emergency Engines Did the Permittee burn only natural gas in natural gas fired engines?	Answer: Continuous Method: Other Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
49	ATTACHMENT B.V.B.2 Specific Conditions, Emergency Engines	Answer: Continuous Method:

	Did the Permittee burn only low sulfur diesel (less than 0.9 percent sulfur) in the diesel-fired engine?	Other Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
50	ATTACHMENT B.V.C.1.a, b Specific Conditions, Emergency Engines Did the Permittee not cause, allow or permit the emission of particulate matter, caused by combustion of fuel, from the generators into the atmosphere in excess of the amounts calculated by the following equation? E = 1.02 * Q^0.769 where: E = the maximum allowable particulate emission rate in pounds-mass per hour. Q = the heat input in million Btu per hour. For the purposes of Condition V.C.1.a of Attachment "B" the heat input shall be the aggregate heat content of all fuels whose products of combustion pass through a stack or other outlet. The total heat input of all operating fuel-burning units on a plant or premises shall be used for determining the maximum allowable amount of particulate matter which may be emitted.	Answer: Continuous Method: Other Additional Remarks: Facility Procedures, Emissions Calculations Supporting Documents Needed: No Supporting Documents Provided:No
51	ATTACHMENT B.V.C.1.c Specific Conditions, Emergency Engines Did the Permittee not cause, allow or permit to be emitted into the atmosphere from the generators smoke for any period greater than 10 consecutive seconds which exceeds 40% opacity? Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.	Answer: Continuous Method: Other Visible Emission Surveys Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
52	ATTACHMENT B.V.C.2.a Specific Conditions, Emergency Engines Did a certified Method 9 observer conduct the periodic opacity monitoring method specified in Condition I.A of Attachment “B” on a monthly basis from the stack of the	Answer: Continuous Method: Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No

	diesel engine, when in operation?	
53	ATTACHMENT B.V.C.2.b Specific Conditions, Emergency Engines Did the Permittee keep records of fuel supplier certifications containing information regarding the name of the fuel supplier and lower heating value of the fuel?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
54	ATTACHMENT B.V.D.1 Specific Conditions, Emergency Engines Did the Permittee not emit or cause to emit from the diesel engine more than 1.0 pound of sulfur dioxide per million Btu?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Low Sulfur Diesel Fuel Usage Supporting Documents Needed: No Supporting Documents Provided:No
55	ATTACHMENT B.V.D.2.a Specific Conditions, Emergency Engines For SI engines, did the Permittee maintain records of the gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying the maximum total sulfur content of the fuel?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
56	ATTACHMENT B.V.D.2.b Specific Conditions, Emergency Engines For diesel engines, did the Permittee keep records of fuel supplier certifications or other documentation listing the sulfur content to demonstrate compliance with the sulfur content limit specified in Condition V.B.2 of Attachment "B"? These records shall be made available to ADEQ upon request.	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
57	ATTACHMENT B.V.D.2.c Specific Conditions, Emergency Engines Did the Permittee report to the Director any daily period	Answer: Continuous Method: Reporting

	during which the sulfur content of the fuel being fired in the engine exceeds 0.8%?	Supporting Documents Needed: No Supporting Documents Provided:No
58	ATTACHMENT B.V.E.1.b Specific Conditions, Emergency Engines At all times, did the Permittee operate and maintain the engines, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions? The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Director which may include but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.	Answer: Continuous Method: Other Operation & Maintenance Plans Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
59	ATTACHMENT B.V.E.1.c Specific Conditions, Emergency Engines Did the Permittee minimize the engine time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in shall apply?	Answer: Continuous Method: Other Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
60	ATTACHMENT B.V.E.1.d Specific Conditions, Emergency Engines Did the Permittee operate and maintain the engines in accordance with manufacturer’s emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No

61	ATTACHMENT B.V.E.2.a(1) Specific Conditions, Emergency Engines Did the Permittee change the oil and filter every 500 hours operation or annually, whichever comes first, or use the oil analysis program in order to extend the specified oil change requirement?	Answer: Continuous Method: Recordkeeping Operation & Maintenance Plans Supporting Documents Needed: No Supporting Documents Provided:No
62	ATTACHMENT B.V.E.2.a(1) Specific Conditions, Emergency Engines Did the Permittee use the oil analysis program during the compliance period?	Answer: NO
63	ATTACHMENT B.V.E.2.a(2) Specific Conditions, Emergency Engines Every 1,000 hours of operation or annually, whichever comes first, did the permittee inspect and replace as necessary, spark plugs for SI engine, and/or air cleaner for CI engine?	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
64	ATTACHMENT B.V.E.2.a(3) Specific Conditions, Emergency Engines Did the Permittee inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary?	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
65	ATTACHMENT B.V.E.2.a(4) Specific Conditions, Emergency Engines Did the Permittee operate the emergency engines according to the requirements in Condition V.E.1.d(1)-(4) of Attachment "B"?	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

66	ATTACHMENT B.V.E.2.b Specific Conditions, Emergency Engines Did the Permittee install non-resettable hour meters on the emergency engines?	Answer: Continuous Method: Other Additional Remarks: Equipment Design Supporting Documents Needed: No Supporting Documents Provided:No
67	ATTACHMENT B.V.E.2.c Specific Conditions, Emergency Engines Did the Permittee operate the emergency engines according to the requirements in Conditions V.E.2.c(1) and V.E.2.c(3) of Attachment “B”?	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
68	ATTACHMENT B.V.E.3 Specific Conditions, Emergency Engines Did the Permittee demonstrate continuous compliance by operating and maintaining the engines according to the manufacturer's emission-related operation and maintenance instructions; or by developing and following its own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engines in a manner consistent with good air pollution control practice for minimizing emissions?	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
69	ATTACHMENT B.V.E.4.a Specific Conditions, Emergency Engines Did the Permittee keep records described below? (1) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment. (2) Records of all required maintenance performed on the air pollution control and monitoring equipment. (3) Records of actions taken during periods of malfunction to minimize emissions in	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

	accordance with Condition V.E.1.b of Attachment "B" including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.	
70	ATTACHMENT B.V.E.4.b Specific Conditions, Emergency Engines Did the Permittee keep records of the maintenance conducted on the engine in order to demonstrate that the engine and after-treatment control device (if any) were operated and maintained in accordance with the Permittee's maintenance plan?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
71	ATTACHMENT B.V.E.4.c Specific Conditions, Emergency Engines Did the Permittee keep records of the hours of operation of the RICE that is recorded through the non-resettable hour meter? Records shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
72	ATTACHMENT B.V.E.4.d Specific Conditions, Emergency Engines Did the Permittee keep records of the parameters that are analyzed and the results of the oil analysis, if any, and the oil changes for the engine?	Answer: Continuous Method: Recordkeeping Additional Remarks: An oil analysis was not performed during this compliance certification period. Supporting Documents Needed: Yes Supporting Documents Provided:No
73	ATTACHMENT B.V.E.4.e Specific Conditions, Emergency Engines Did the Permittee report each instance in which the requirements of 40 CFR 63, Subpart ZZZZ, Table 2c were not met? These instances are deviations from the emission and	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No

	operating limitations. These deviations must be reported according to Condition V.E.5.a of Attachment "B".	
74	ATTACHMENT B.V.E.4.d Specific Conditions, Emergency Engines Did the Permittee keep records in a form suitable and readily available for expeditious review? The records shall readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1).	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
75	ATTACHMENT B.V.E.5.a Specific Conditions, Emergency Engines Did the Permittee report all deviations as defined in 40 CFR 63, Subpart ZZZZ along with the semiannual compliance certifications?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
76	ATTACHMENT B.V.E.5.b Specific Conditions, Emergency Engines Did the Permittee operate any emergency engine with a site rating of more than 100 brake HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in Condition V.E.2.c(2) of Attachment "B"?	Answer: Continuous Method: Other Additional Remarks: CalPortland did not operate any emergency engines for the purposes specified in Condition V.E.2.c(2) during this compliance certification period. Supporting Documents Needed: No Supporting Documents Provided:No
77	ATTACHMENT B.V.E.5.b(1) Specific Conditions, Emergency Engines Did the Permittee submit to the Administrator and Director annually, a report according to the following requirements during this compliance period? (a) Company name and address where the engine is located. (b) Date of the report and beginning and ending dates of the reporting period. (c)	Answer: YES

	Engine site rating and model year. (d) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place. (e) Hours operated for the purpose specified in Condition V.E.2.c(2) of Attachment "B", including the date, start time, and end time for the engine operation. (f) Number of hours the engine is contractually obligated to be available for the purposes specified in Conditions V.E.2.c(2) of Attachment "B". (g) If there were no deviations from the fuel requirements in 40 CFR 80.510(b) that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period.	
77.1	ATTACHMENT B.V.E.5.b(3) Specific Conditions, Emergency Engines Was the annual report submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.edpa.gov/cdx) or, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report shall be submitted to the Administrator and Director at their respective addresses below? (a) EPA Region IX, Director, Air Division 75th Hawthorne Street San Francisco, CA 94105 (b) Director, Air Quality Division 1110 W. Washington Street Phoenix, AZ 85007	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
78	ATTACHMENT B.V.F.2 Specific Conditions, Emergency Engines Did the Permittee burn only natural gas in natural gas fired engine?	Answer: Continuous Method: Other Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
79	ATTACHMENT B.V.F.3.b(1) Specific Conditions, Emergency	Answer: Continuous

	Engines Did the Permittee install and operate a non-resettable hour meter on the SI engine prior to startup of the engine?	Method: Other Additional Remarks: Equipment Design Supporting Documents Needed: No Supporting Documents Provided:No
80	ATTACHMENT B.V.F.3.b Specific Conditions, Emergency Engines Did the Permittee operate the emergency stationary ICE according to the requirements in Conditions V.F.3.b(1) through V.F.3.b(3) of Attachment “B”? In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in Conditions V.F.3.b(1) through V.F.3.b(3) of Attachment “B”. If the Permittee does not operate the engine according to the requirements in Conditions V.F.3.b(1) through V.F.3.b(3) of Attachment “B”, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.	Answer: Continuous Method: Other Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
81	ATTACHMENT B.V.F.4.a Specific Conditions, Emergency Engines Did the Permittee operate and maintain the stationary emergency SI ICE such that it complies with the emission standards listed in §60.4233 over the entire life of the engine?	Answer: Continuous Method: Other Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
82	ATTACHMENT B.V.F.4.b Specific Conditions, Emergency Engines When operating a stationary emergency SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in §60.4230(a)(4) that use gasoline did the Permittee comply	Answer: Continuous Method: Other Additional Remarks: Facility Procedures Supporting Documents Needed: No

	with the emission standards in §60.4231(b) for their stationary SI ICE. to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1048?	Supporting Documents Provided:No
83	ATTACHMENT B.V.F.5.a Specific Conditions, Emergency Engines Did the Permittee operate and maintain each SI engine over its entire life according to the manufacturer's emission-related written instructions?	Answer: Continuous Method: Other Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
84	ATTACHMENT B.V.F.5.b Specific Conditions, Emergency Engines Did the Permittee keep records of the following? (1) All notifications submitted to comply with this subpart and all documentation supporting any notification. (2) Maintenance conducted on the engine. (3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable. (4) If the stationary SI ICE is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards.	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
85	ATTACHMENT B.V.F.5.c Specific Conditions, Emergency Engines Did the Permittee keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter? The Permittee shall document how many hours are spent for emergency operation; including what classified the operation as emergency and how many hours are spent for non-emergency operation.	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

86	ATTACHMENT B.V.F.5.d Specific Conditions, Emergency Engines Did the Permittee operate a stationary SI ICE greater than or equal to 500 HP that has not been certified by an engine manufacturer to meet the emission standards in §60.4231?	Answer: NO
87	ATTACHMENT B.V.F.5.e Specific Conditions, Emergency Engines If the Permittee operated an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in Conditions V.F.3.b(2)(b) and V.F.3.b(2)(c) of Attachment "B" or that was operated for the purposes specified in 40 CFR 60.4243(d)(3)(i), did the permittee submit an annual report according to Conditions V.F.5.e(1) - (7) of Attachment "B"?	Answer: Continuous Method: Other Additional Remarks: CalPortland did not operate an emergency stationary CI ICE that operates for the purposes specified in 40 CFR 60.4243(d)(3)(i). Supporting Documents Needed: No Supporting Documents Provided:No
88	ATTACHMENT B.V.F.5.f Specific Conditions, Emergency Engines Did the Permittee submit an annual report for each calendar year? The annual report must be submitted no later than March 31 of the following calendar year.	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
89	ATTACHMENT B.V.F.5.g Specific Conditions, Emergency Engines Was the annual report submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx)? Note: If the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in 40 CFR 60.4.	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No

90	ATTACHMENT B.VI.B Specific Conditions, Fuel Burning Equipment Did the Permittee only burn natural gas in all the heaters and boilers?	Answer: Continuous Method: Other Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
91	ATTACHMENT B.VI.C.1.a, b Specific Conditions, Fuel Burning Equipment Did the Permittee not cause, allow, or permit the emission of particulate matter, caused by combustion of fuel, from any fuel burning operation subject to this Section, in excess of the amounts calculated by one of the following equations? (1) For equipment having a heat input rate of 4,200 million BTU per hour or less, the maximum allowable emissions shall be determined by the following equation: E = 1.02 * Q ^ 0.769 where E = the maximum allowable particulate emission in pounds-mass per hour, Q = the heat input rate in million BTU per hour. (2) For equipment having a heat input rate greater than 4,200 million BTU per hour, the maximum allowable emissions shall be determined by the following equation: E = 17.0 * Q^0.432 where: E and Q have the same meaning as in Condition VI.C.1.a(1) of Attachment "B". For purposes of this Part the heat input shall be the aggregate heat content of all fuels whose products of combustion pass through a stack or other outlet. The total heat input of all fuel-burning units on a plant or premises shall be used for determining the maximum allowable amount of particulate matter which may be emitted.	Answer: Continuous Method: Other Additional Remarks: Facility Procedures, Emissions Calculations Supporting Documents Needed: No Supporting Documents Provided:No
92	ATTACHMENT B.VI.C.1.c Specific Conditions, Fuel Burning Equipment Did the Permittee not cause the emission of any plume from process sources subject to this Section, whose opacity is greater than 15 percent as determined by EPA Reference	Answer: Continuous Method: Other Visible Emission Surveys Additional Remarks: Facility Procedures

	Method 9 of 40 CFR Part 60, Appendix A?	Supporting Documents Needed: No Supporting Documents Provided:No
93	ATTACHMENT B.VI.C.2.a Specific Conditions, Fuel Burning Equipment Did the Permittee keep records of fuel supplier certifications to demonstrate compliance? The certification shall contain information regarding the name of fuel supplier and lower heating value of the fuel. These records shall be made available to ADEQ upon request.	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
94	ATTACHMENT B.VI.C.2.b Specific Conditions, Fuel Burning Equipment Did the Permittee report all 6-minute periods during which the visible emissions exceed 15 percent opacity, as required under Section XI of Attachment “A”?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
95	ATTACHMENT B.VI.D Specific Conditions, Fuel Burning Equipment The next Part is applicable to the following boilers and process heaters identified in Attachment “D”: (1) Bunker C Boiler (6.275 MMBtu/hour) (2) D4-RM1 Heater (75 MMBtu/hour). Was the affected equipment operated during this compliance period?	Answer: NO
96	ATTACHMENT B.VII.B.1 Specific Conditions, Gasoline Storage Tank Was the gasoline storage tank equipped with a submerged filling device or acceptable equivalent, for control of hydrocarbon emissions?	Answer: Continuous Method: Other Additional Remarks: Equipment Design Supporting Documents Needed: No Supporting Documents Provided:No
97	ATTACHMENT B.VII.B.2 Specific Conditions, Gasoline Storage Tank	Answer: Continuous Method:

	Were all pumps and compressors that handle gasoline equipped with mechanical seals or other equipment of equal efficiency to prevent release of organic contaminants into the atmosphere?	Other Additional Remarks: Equipment Design Supporting Documents Needed: No Supporting Documents Provided:No
98	ATTACHMENT B.VII.C Specific Conditions, Gasoline Storage Tank Did the Permittee, for the gasoline storage tank, maintain a file, of the typical Reid vapor pressure of gasoline stored and of dates of storage? Records of the dates on which the storage vessel is empty shall be maintained.	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
99	ATTACHMENT B.VIII.B.1 Specific Conditions, Diesel/Used Oil Tanks Was the storage tank equipped with a submerged filling device or acceptable equivalent, for control of hydrocarbon emissions?	Answer: Continuous Method: Other Additional Remarks: Equipment Design Supporting Documents Needed: No Supporting Documents Provided:No
100	ATTACHMENT B.VIII.B.2 Specific Conditions, Diesel/Used Oil Tanks Were all pumps and compressors that handle volatile organic compounds equipped with mechanical seals or other equipment of equal efficiency to prevent release of organic contaminants into the atmosphere?	Answer: Continuous Method: Other Additional Remarks: Equipment Design Supporting Documents Needed: No Supporting Documents Provided:No
101	ATTACHMENT B.VIII.C Specific Conditions, Diesel/Used Oil Tanks Were materials including solvents or other volatile compounds, and other chemicals utilized in the processes under Section VIII of Attachment "B" processed, stored, used, and transported in such a manner and by means that they will not evaporate, leak, escape or be otherwise discharged into the ambient air so as to cause or contribute to air	Answer: Continuous Method: Other Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No

	pollution? Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage or discharge, the installation and use of such control methods, devices, or equipment shall be mandatory. Where a stack, vent or other outlet is at such a level that fumes, gas mist, odor, smoke, vapor or any combination thereof constituting air pollution is discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent, or other outlet by the Permittee to a degree that will adequately dilute, reduce or eliminate the discharge of air pollution to adjoining property.	
102	ATTACHMENT B.IX.A Specific Conditions, Other Periodic Activities Did the Permittee conduct any periodic activities as listed in the Permit?	Answer: YES
102.1	ATTACHMENT B.IX.A Specific Conditions, Other Periodic Activities Did the Permittee conduct abrasive blasting activities during the compliance period?	Answer: YES
102.1.1	ATTACHMENT B.IX.A.1.a Specific Conditions, Other Periodic Activities Did the Permittee NOT cause or allow sandblasting or other abrasive blasting without minimizing dust emissions to the atmosphere through the use of good modern practices? Good modern practices include: (1) wet blasting; (2) effective enclosures with necessary dust collecting equipment; or (3) any other method approved by the Director.	Answer: Continuous Method: Other Additional Remarks: Facility Procedures, Work Practices. Abrasive blasting was conducted in an enclosed bead blasting unit, which controls emissions. Supporting Documents Needed: No Supporting Documents Provided:No
102.1.2	ATTACHMENT B.IX.A.1.b Specific Conditions, Abrasive Blasting Did the permittee not cause, allow or permit visible emissions from sandblasting or other abrasive blasting	Answer: Continuous Method: Other Additional Remarks: Facility Procedures. Abrasive

	operations in excess of 20% opacity, as measured by EPA Reference Method 9?	blasting was conducted in an enclosed bead blasting unit, which controls emissions. Supporting Documents Needed: No Supporting Documents Provided:No
102.1.3	ATTACHMENT B.IX.A.2 Specific Conditions, Other Periodic Activities Each time an abrasive blasting project was conducted, did the Permittee make a record of the following: a. The date the project was conducted; b. The duration of the project; and c. Type of control measures employed?	Answer: Continuous Method: Recordkeeping Additional Remarks: Abrasive blasting was conducted in an enclosed bead blasting unit, which controls emissions. Supporting Documents Needed: No Supporting Documents Provided:No
102.2	ATTACHMENT B.IX.B Specific Conditions, Other Periodic Activities Did the Permittee conduct spray painting during the compliance period?	Answer: NO
102.3	ATTACHMENT B.IX.C Specific Conditions, Other Periodic Activities Did the Permittee conduct demolition or renovation activities during the compliance period?	Answer: NO
103	ATTACHMENT B.X Specific Conditions, Ambient Monitoring Requirements If the monitored daily average concentration at the ADEQ PM10 monitoring site was greater than 150 μg/m3 and the Department requested a demonstration that the facility's operations did not cause or contribute to the exceedance, did the Permittee provide to the Director an evaluation as to whether any event (including upset conditions) at the facility may have caused or contributed to the exceedance within 30 days of the notification?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No

104	ATTACHMENT C.I.D.2.a Requirements for Cement Plant, Applicability On a quarterly basis, did the Permittee query calibration gas suppliers on the availability of the NIST-traceable HCl calibration gases and record the information obtained?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
105	ATTACHMENT C.I.D.2.b Requirements for Cement Plant, Applicability Were certified progress reports submitted to the ADEQ on a semi-annual basis detailing the availability of calibration gases, and updated information on the certification progress of the HCl CEMS, if any?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
106	ATTACHMENT C.I.D.2.c Requirements for Cement Plant, Applicability Upon receipt of the procurement date for NIST-traceable HCl calibration gases, did the Permittee notify the Department of the following information? (1) The approximate date that HCl gases will be delivered to the facility; (2) The approximate date for submittal of the Relative Accuracy Test Audit (RATA) protocol to ADEQ; and (3) The scheduled HCl CEMS RATA performance test date.	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
107	ATTACHMENT C.I.D.3.a Requirements for Cement Plant, Applicability On a quarterly basis, did the Permittee query calibration gas suppliers on the availability of the NIST-traceable mercury calibration gas and record the information obtained?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
108	ATTACHMENT C.I.D.3.b Requirements for Cement Plant, Applicability Were certified progress reports submitted to the ADEQ on a	Answer: Continuous Method: Reporting

	semi-annual basis detailing the availability of calibration gas, and updated information on the certification progress of the mercury CEMS, if any?	Supporting Documents Needed: No Supporting Documents Provided:No
109	ATTACHMENT C.I.D.3.c Requirements for Cement Plant, Applicability Upon receipt of a procurement date for NIST-traceable mercury calibration gases, did the Permittee notify the Department of the following information? (1) The approximate date that mercury calibration gases will be delivered to the facility; (2) The approximate date for submittal of the Relative Accuracy Test Audit (RATA) protocol; and (3) The scheduled HCl CEMS RATA performance test date.	Answer: Continuous Method: Reporting Additional Remarks: NIST-traceable mercury calibration gases are still unavailable. Supporting Documents Needed: No Supporting Documents Provided:No
110	ATTACHMENT C.II.A.2 Requirements for Cement Plant, General NESHAP Requirements Did the Permittee prepare, for each affected source subject to the provisions of 40 CFR 63 Subpart LLL a written operations and maintenance plan?	Answer: Continuous Method: Operation & Maintenance Plans Supporting Documents Needed: No Supporting Documents Provided:No
111	ATTACHMENT C.II.A.2, 3 Requirements for Cement Plant, General NESHAP Requirements Did the operations and maintenance plan include the following information? a. Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emission limits and operating limits including fugitive dust control measures for open clinker piles under 40 CFR 63 Subpart LLL; b. Corrective actions to be taken when required by Condition VII.B.4.e of Attachment "C"; c. Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year. d. The operation and maintenance plan shall also address periods of startup and	Answer: Continuous Method: Operation & Maintenance Plans Supporting Documents Needed: No Supporting Documents Provided:No

	shutdown. Failure to comply with any provision of the operations and maintenance plan developed in accordance with Section II of Attachment "C" is a violation of the standard.	
112	ATTACHMENT C.II.A.4 Requirements for Cement Plant, General NESHAP Requirements At all times, did the Permittee operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions? Determination of whether such operation and maintenance procedures are being used will be based on information available to the Director which may include but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.	Answer: Continuous Method: Other Operation & Maintenance Plans Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
113	ATTACHMENT C.II.B.1.a Requirements for Cement Plant, General NESHAP Requirements Did the Permittee demonstrate compliance with the monitoring requirements in Attachment "C" on a continuous basis?	Answer: Continuous Method: Other Additional Remarks: See Individual Permit Conditions Supporting Documents Needed: No Supporting Documents Provided:No
114	ATTACHMENT C.II.B.1.b, c Requirements for Cement Plant, General NESHAP Requirements For each existing unit that is equipped with a Continuous Monitoring System (CMS), did the Permittee maintain the average emissions or the operating parameter values within the operating parameter limits established through performance tests? Any instance where the Permittee fails to comply with the continuous monitoring requirements of Attachment "B" shall be a violation.	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Supporting Documents Needed: No Supporting Documents Provided:No

115	ATTACHMENT C.II.B.1.d Requirements for Cement Plant, General NESHAP Requirements Did the Permittee monitor and collect data according to §63.1350 and the site-specific monitoring plan required by Condition II.B.6 of Attachment "C"?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Supporting Documents Needed: No Supporting Documents Provided:No
116	ATTACHMENT C.II.B.1.e Requirements for Cement Plant, General NESHAP Requirements Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), did the Permittee operate the monitoring system and collect data at all required intervals at all times the affected source is operating?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
117	ATTACHMENT C.II.B.1.f Requirements for Cement Plant, General NESHAP Requirements Did the Permittee not use data recorded during monitoring system malfunctions or repairs associated with monitoring system malfunctions in calculations used to report emissions or operating levels? A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions.	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
118	ATTACHMENT C.II.B.1.f Requirements for Cement Plant, General NESHAP Requirements Did the Permittee use all the data collected during all other periods in assessing the operation of the control device and associated control system?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Work Practices Supporting Documents Needed: No

		Supporting Documents Provided:No
119	ATTACHMENT C.II.B.2.a Requirements for Cement Plant, General NESHAP Requirements For any operating limit that requires use of CMS, did the Permittee install, operate, and maintain each continuous parameter monitoring system (CPMS) according to the following procedures? (1) The CPMS shall complete a minimum of one cycle of operation for each successive 15-minute period. The Permittee shall have a minimum of four successive cycles of operation to have a valid hour of data. (2) The Permittee shall conduct all monitoring in continuous operation at all times that the unit is operating. (3) The Permittee shall determine the 1-hour block average of all recorded readings. (4) The Permittee shall record the results of each inspection, calibration, and validation check.	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Work Practices, Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
120	ATTACHMENT C.II.B.2.b Requirements for Cement Plant, General NESHAP Requirements In addition to the above, did the Permittee comply with specific parametric requirements under 40 CFR 63.1350(m)(5) through (11), as applicable?	Answer: Continuous Method: Parametric Monitoring Supporting Documents Needed: No Supporting Documents Provided:No
121	ATTACHMENT C.II.B.3 Requirements for Cement Plant, General NESHAP Requirements Did the Permittee install, calibrate, operate and maintain instruments for continuously measuring and recording the stack gas flow rate to allow determination of the pollutant mass emissions rate to the atmosphere from sources subject to an emissions limitation that has a pounds per ton of clinker unit and that is required to be monitored by a CEMS?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
122	ATTACHMENT C.II.B.3.a Requirements for Cement Plant, General NESHAP Requirements Did the Permittee install each sensor of the flow rate	Answer: Continuous Method: Other

	monitoring system in a location that provides representative measurement of the exhaust gas flow rate at the sampling location of the mercury CEMS, taking into account the manufacturer's recommendations? The flow rate sensor is that portion of the system that senses the volumetric flow rate and generates an output proportional to that flow rate.	Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
123	ATTACHMENT C.II.B.3.b Requirements for Cement Plant, General NESHAP Requirements Was the flow rate monitoring system designed to measure the exhaust flow rate over a range that extends from a value of at least 20 percent less than the lowest expected exhaust flow rate to a value of at least 20 percent greater than the highest expected exhaust flow rate?	Answer: Continuous Method: Other Additional Remarks: Equipment Design Supporting Documents Needed: No Supporting Documents Provided:No
124	ATTACHMENT C.II.B.3.c Requirements for Cement Plant, General NESHAP Requirements Was the flow rate monitoring system equipped with a data acquisition and recording system that is capable of recording values over the entire range specified in Condition II.B.3.b of Attachment "C"?	Answer: Continuous Method: Other Additional Remarks: Equipment Design Supporting Documents Needed: No Supporting Documents Provided:No
125	ATTACHMENT C.II.B.3.d Requirements for Cement Plant, General NESHAP Requirements Were the signal conditioner, wiring, power supply, and data acquisition and recording system for the flow rate monitoring system compatible with the output signal of the flow rate sensors used in the monitoring system?	Answer: Continuous Method: Other Additional Remarks: Equipment Design Supporting Documents Needed: No Supporting Documents Provided:No
126	ATTACHMENT C.II.B.3.e Requirements for Cement Plant, General NESHAP Requirements Was the flow rate monitoring system designed to complete a minimum of one cycle of operation for each successive 15-minute period?	Answer: Continuous Method: Other Additional Remarks: Equipment Design Supporting Documents Needed: No

		Supporting Documents Provided:No
127	ATTACHMENT C.II.B.3.f Requirements for Cement Plant, General NESHAP Requirements Did the flow rate sensor have provisions to determine the daily zero and upscale calibration drift (CD) (Refer Sections 3.1 and 8.3 of Performance Specification 2 in Appendix B to 40 CFR Part 60)? (1) Conduct the CD tests at two reference signal levels, zero (e.g., 0 to 20 percent of span) and upscale (e.g., 50 to 70 percent of span). (2) The absolute value of the difference between the flow monitor response and the reference signal shall be equal to or less than 3 percent of the flow monitor span.	Answer: Continuous Method: Other Additional Remarks: System / Equipment Design Supporting Documents Needed: No Supporting Documents Provided:No
128	ATTACHMENT C.II.B.3.g Requirements for Cement Plant, General NESHAP Requirements Did the Permittee perform an initial relative accuracy test of the flow rate monitoring system during the compliance period?	Answer: NO
129	ATTACHMENT C.II.B.3.h Requirements for Cement Plant, General NESHAP Requirements Did the Permittee verify the accuracy of the flow rate monitoring system at least once per year by repeating the relative accuracy test specified in Condition II.B.3.g of Attachment "C"?	Answer: Continuous Method: Performance/Source Testing Additional Remarks: The accuracy of the flow rate monitoring system was verified on 03/25/2026. Supporting Documents Needed: No Supporting Documents Provided:No
130	ATTACHMENT C.II.B.3.i, B.4 Requirements for Cement Plant, General NESHAP Requirements Did the Permittee operate the flow rate monitoring system and record data during all periods of operation of the affected facility including periods of startup, shutdown, and malfunction, except for periods of monitoring system malfunctions, repairs associated with monitoring system	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Work Practices Supporting Documents Needed: No

	malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments)? The Permittee may submit an application to the Administrator for approval of alternate monitoring requirements to demonstrate compliance with the emission standards subject to the provisions of 40 CFR 63.1350(o)(1) through (6).	Supporting Documents Provided:No
131	ATTACHMENT C.II.B.6 Requirements for Cement Plant, General NESHAP Requirements If the Permittee demonstrates compliance with any applicable emissions limit through performance stack testing or other emissions monitoring, did the Permittee develop a site-specific monitoring plan according to the requirements in 40 CFR 63.1350(p)? This requirement also applies if the Permittee petitions the EPA Administrator for alternative monitoring parameters under Condition II.B.4 of Attachment "C" and 40 CFR 63.8(f).	Answer: Continuous Method: Other Additional Remarks: Site-Specific Monitoring Plan Supporting Documents Needed: No Supporting Documents Provided:No
132	ATTACHMENT C.II.C.1 Requirements for Cement Plant, General NESHAP Requirements Did the Permittee operate all air pollution control devices including during periods of startup and shutdown?	Answer: Continuous Method: Other Operation & Maintenance Plans Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
133	ATTACHMENT C.II.C.2.a Requirements for Cement Plant, General NESHAP Requirements During startup, did the Permittee use any one or combination of the following clean fuels: natural gas, synthetic natural gas, propane, distillate oil, synthesis gas (syngas), and ultra-low sulfur diesel (ULSD) until the kiln reaches a temperature of 1200 degrees Fahrenheit?	Answer: Continuous Method: Other Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No

134	ATTACHMENT C.II.C.2.b Requirements for Cement Plant, General NESHAP Requirements Did the Permittee commence combustion of the primary kiln fuel once the kiln temperature reaches 1200 degrees Fahrenheit?	Answer: Continuous Method: Other Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
135	ATTACHMENT B.II.C.2.c Requirements for Cement Plant, General NESHAP Requirements Were all dry sorbent and activated carbon systems that control hazardous air pollutants turned on and operating at the time the gas stream at the inlet to the baghouse or ESP reaches 300 degrees Fahrenheit (five-minute average) during startup? Temperature of the gas stream shall be measured at the inlet of the baghouse or ESP every minute. Such injection systems can be turned off during shutdown. Particulate control and all remaining devices that control hazardous air pollutants should be operational during startup and shutdown.	Answer: Continuous Method: Other Additional Remarks: Not applicable - no dry sorbent or activated carbon systems are used to control hazardous air pollutants at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
136	ATTACHMENT C.II.C.2.d Requirements for Cement Plant, General NESHAP Requirements Did the Permittee keep records as specified in Section II.G of Attachment "C" during periods of startup and shutdown?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
137	ATTACHMENT C.II.D.1 Requirements for Cement Plant, General NESHAP Requirements Was the Permittee required to demonstrate initial compliance with the emissions standards and operating limits during the compliance period?	Answer: NO
138	ATTACHMENT C.II.D.4.a Requirements for Cement Plant, General NESHAP Requirements	Answer: NO

	Did the Permittee plan to undertake a change in operations that may adversely affect compliance with an applicable standard, operating limit, or parametric monitoring value?	
139	ATTACHMENT C.II.D.6 Requirements for Cement Plant, General NESHAP Requirements Within 60 days after the date of completing each performance evaluation or test, as defined in 40 CFR 63.2, conducted to demonstrate compliance with any standards under 40 CFR 63 Subpart LLL, did the Permittee submit the relative accuracy test audit data and performance test data, except opacity data, to EPA by successfully submitting the data electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT)? (See http://www.epa.gov/ttn/chief/ert/ert_tool.html).	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
140	ATTACHMENT C.II.E Requirements for Cement Plant, General NESHAP Requirements Did the Permittee comply with the notification requirements in 40 CFR 63.9 as follows? 1. Initial notifications as required by 40 CFR 63.9(b) through (d); 2. Notification of performance tests, as required by 40 CFR 63.7 and 63.9(e); 3. Notification of opacity and visible emission observations required by 40 CFR 63.1349 in accordance with 40 CFR 63.6(h)(5) and 63.9(f); 4. Notification, as required by 40 CFR 63.9(g), of the date that the continuous emission monitor performance evaluation required by 40 CFR 63.8(e) is scheduled to begin; 5. Notification of compliance status, as required by 40 CFR 63.9(h); and 6. Within 48 hours of an exceedance that triggers retesting to establish compliance and new operating limits, the Permittee shall notify the Director of the planned performance tests. The notification requirements of 40 CFR 63.7(b) and 63.9(e) do not apply to retesting required for exceedances under 40 CFR 63 Subpart LLL.	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No

141	ATTACHMENT C.II.F.1.a Requirements for Cement Plant, General NESHAP Requirements As required by 40 CFR 63.10(d)(2), did the Permittee report the results of performance tests as a part of the notification of compliance status?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
142	ATTACHMENT C.II.F.1.b Requirements for Cement Plant, General NESHAP Requirements As required by 40 CFR 63.10(d)(3), did the Permittee report the opacity results from tests required by 40 CFR 63 Subpart LLL?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
143	ATTACHMENT C.II.F.1.c Requirements for Cement Plant, General NESHAP Requirements As required by 40 CFR 63.10(d)(4), did the Permittee who is required to submit progress reports as a condition of receiving an extension of compliance under 40 CFR 63.6(i) submit such reports by the dates specified in the written extension of compliance?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
144	ATTACHMENT C.II.F.1.d Requirements for Cement Plant, General NESHAP Requirements As required by 40 CFR 63.10(e)(2), did the Permittee submit a written report of the results of the performance evaluation for the continuous monitoring system required by 40 CFR 63.8(e)? Did the Permittee submit the report simultaneously with the results of the performance test?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
145	ATTACHMENT C.II.F.1.e Requirements for Cement Plant, General NESHAP Requirements As required by 40 CFR 63.10(e)(2), did the Permittee using a continuous opacity monitoring system to determine opacity compliance during any performance test required under 40 CFR 63.7 and described in 40 CFR 63.6(d)(6) report the results of the continuous opacity monitoring system	Answer: Continuous Method: Other Additional Remarks: A continuous opacity monitoring system is not used to demonstrate compliance with the opacity standard.

	performance evaluation conducted under 40 CFR 63.8(e)?	Supporting Documents Needed: No Supporting Documents Provided:No
146	ATTACHMENT C.II.F.1.f Requirements for Cement Plant, General NESHAP Requirements As required by 40 CFR 63.10(e)(3), did the Permittee equipped with a continuous emission monitor submit an excess emission and continuous monitoring system performance report for any event when the continuous monitoring system data indicate the source is not in compliance with the applicable emission limitation or operating parameter limit?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
147	ATTACHMENT C.II.F.1.g Requirements for Cement Plant, General NESHAP Requirements Did the Permittee submit a summary report semiannually to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI) or if the reporting form specific to 40 CFR 63 Subpart LLL is not available in CEDRI at the time that the report is due, did the Permittee submit the report to the Administrator at the appropriate address listed in 40 CFR 63.13? (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (www.epa.gov/cdx).) The Permittee shall begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI. The reports shall be submitted by the deadline specified in 40 CFR 63 Subpart LLL, regardless of the method in which the reports are submitted. The summary report shall contain the information specified in 40 CFR 63.10(e)(3)(vi).	Answer: YES
147.1	ATTACHMENT C.II.F.1.g(1)-(7) Requirements for Cement Plant, General NESHAP Requirements Did the summary report include the reporting requirements specified in Condition II.F.1.g(1)-(7) of Attachment "C"?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No

148	ATTACHMENT C.II.F.1.h Requirements for Cement Plant, General NESHAP Requirements Was the total continuous monitoring system downtime for any CEM or any CMS for the reporting period ten percent or greater of the total operating time for the reporting period?	Answer: NO
149	ATTACHMENT C.II.F.2 Requirements for Cement Plant, General NESHAP Requirements For each failure to meet a standard or emission limit caused by a malfunction at an affected source, did the Permittee report the failure in the semiannual compliance report required in Condition II.F.1.g of Attachment "C"? The report shall contain the date, time and duration, and the cause of each event (including unknown cause, if applicable), and a sum of the number of events in the reporting period. The report shall list for each event the affected source or equipment, an estimate of the volume of each regulated pollutant emitted over the emission limit for which the source failed to meet a standard, and a description of the method used to estimate the emissions. The report shall also include a description of actions taken by the Permittee during a malfunction of an affected source to minimize emissions in accordance with Condition II.A.4 of Attachment "C" including actions taken to correct a malfunction.	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
150	ATTACHMENT C.II.G.1 Requirements for Cement Plant, General NESHAP Requirements Did the Permittee maintain files of all information (including all reports and notifications) recorded in a form suitable and readily available for inspection and review as required by 40 CFR 63.10(b)(1)? The files shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two years of data shall be retained on site. The remaining three years of data may be retained off-site. The files may be maintained on microfilm,	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

	on a computer, on floppy disks, on magnetic tape, or on microfiche.	
151	ATTACHMENT C.II.G.2 Requirements for Cement Plant, General NESHAP Requirements Did the Permittee maintain records for each affected source as required by 40 CFR 63.10(b)(2) and (b)(3); a. All documentation supporting initial notifications and notifications of compliance status under 40 CFR 63.9; b. All records of applicability determination, including supporting analyses; and c. If the Permittee has been granted a waiver under 40 CFR 63.8(f)(6), any information demonstrating whether the Permittee is meeting the requirements for a waiver of recordkeeping or reporting requirements?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
152	ATTACHMENT C.II.G.3 Requirements for Cement Plant, General NESHAP Requirements In addition to the recordkeeping requirements in Condition II.G.2 of Attachment "C", did the Permittee maintain all records required by 40 CFR 63.10(c) for the continuous monitoring systems?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
153	ATTACHMENT C.II.G.4 Requirements for Cement Plant, General NESHAP Requirements Did the Permittee keep records of the daily clinker production rates according to the clinker production monitoring requirements in §63.1350(d)?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
154	ATTACHMENT C.II.G.5 Requirements for Cement Plant, General NESHAP Requirements Did the Permittee keep records of the date, time and duration of each startup or shutdown period for any affected source that is subject to a standard during startup or shutdown that differs from the standard applicable at other times, and the quantity of feed and fuel used during the	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

	startup or shutdown period?	
155	ATTACHMENT C.II.G.6 Requirements for Cement Plant, General NESHAP Requirements Did the Permittee keep records of the date, time and duration of each malfunction that caused an affected source to fail to meet an applicable standard? If there was also a monitoring malfunction, the date, time and duration of the monitoring malfunction; the record must list the affected source or equipment, an estimate of the volume of each regulated pollutant emitted over the standard for which the source failed to meet a standard, and a description of the method used to estimate the emissions.	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
156	ATTACHMENT C.II.G.7 Requirements for Cement Plant, General NESHAP Requirements Did the Permittee keep records of actions taken during periods of malfunction to minimize emissions in accordance with Condition II.A.4 of Attachment "C" including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
157	ATTACHMENT C.II.G.8 Requirements for Cement Plant, General NESHAP Requirements For each exceedance from an emissions standard or established operating parameter limit, did the Permittee keep records of the date, duration and description of each exceedance and the specific actions taken for each exceedance including inspections, corrective actions and repeat performance tests and the results of those actions?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
158	ATTACHMENT C.II.G.9 Requirements for Cement Plant, General NESHAP Requirements Did the Permittee keep records of periods of operations of Clinker Bypass Bin, H2-SB1?	Answer: Continuous Method: Recordkeeping

		Supporting Documents Needed: No Supporting Documents Provided:No
159	ATTACHMENT C.III.B.1.a(1) Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee not cause, allow or permit the discharge of particulate matter from the equipment that commenced construction on or before October 27, 1974, and that did not commence modifications after October 27, 1974, into the atmosphere, in any one hour from any coal preparation plant in total quantities in excess of the amounts calculated by one of the following equations? (a) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable particulate emissions shall be determined by the following equation: E = 3.59 × P^0.62 Where: E = the maximum allowable emissions rate in pounds per hour. P = the process weight rate in tons per hour. (b) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation: E = 17.31 × P^0.16 Where “E” and “P” are defined as in Condition III.B.1.a(1)(a) of Attachment “C”.	Answer: Continuous Method: Other Additional Remarks: Work Practices, Emissions Calculations Supporting Documents Needed: No Supporting Documents Provided:No
160	ATTACHMENT C.III.B.1.a(2) Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee not cause or allow to be emitted into the atmosphere from any existing source subject to this Section any gases which exhibit opacity greater than 20 percent as determined by EPA Reference Method 9 in Appendix A to 40 CFR Part 60?	Answer: Continuous Method: Visible Emission Surveys Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
161	ATTACHMENT C.III.B.2.a Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee operate all equipment in a manner consistent with good air pollution control practice for minimizing particulate matter emissions from the process	Answer: Continuous Method: Other Operation & Maintenance Plans

	sources subject to this Part? This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.	Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
162	ATTACHMENT C.III.B.2.b Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee control fugitive emissions from process sources subject to this Part in accordance with the methods listed in Condition II.B.1.c of Attachment "B"?	Answer: Continuous Method: Other Additional Remarks: Dust Control Plan Supporting Documents Needed: No Supporting Documents Provided:No
163	ATTACHMENT C.III.B.3 Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee conduct a Visible Emissions Observation Procedure, as described in Condition II.B.3.b of Attachment "B", for non-point sources, and fugitive emissions?	Answer: Continuous Method: Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
164	ATTACHMENT C.III.C.2.a(1) Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee not cause to be discharged into the atmosphere from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal that was constructed, reconstructed, or modified on or before April 28, 2008, gases which exhibit 20 percent opacity or greater?	Answer: Continuous Method: Other Visible Emission Surveys Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
165	ATTACHMENT C.III.C.2.a(2) Requirements for Cement Plant, Coal Preparation/Coal Mill Systems For coal processing and conveying equipment, coal storage systems, or coal transfer and loading systems processing coal that were constructed, reconstructed, or modified after April 28, 2008, did the Permittee meet the requirements in Conditions III.C.2.a(2)(a) through III.C.2.a(2)(c) of	Answer: Continuous Method: Other Visible Emission Surveys Additional Remarks: Work Practices Supporting Documents Needed: No

	Attachment “C”, as applicable?	Supporting Documents Provided:No
166	ATTACHMENT C.III.C.3.a Requirements for Cement Plant, Coal Preparation/Coal Mill Systems At all times, including periods of startup, shutdown, and malfunction, did the Permittee, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions? Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.	Answer: Continuous Method: Other Visible Emission Surveys Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
167	ATTACHMENT C.III.C.3.b Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee operate the air dust collectors H3-K4-DC1 & H3-K4-DC2 in a manner consistent with good air pollution control practice for minimizing particulate matter emissions? This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.	Answer: Continuous Method: Parametric Monitoring Operation & Maintenance Plans Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
168	ATTACHMENT C.III.C.4.a Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee conduct all performance tests required by 40 CFR 60.8 to demonstrate compliance with the applicable emission standards using the methods identified in Condition III.C.5 of Attachment “C”?	Answer: Continuous Method: Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
169	ATTACHMENT C.III.C.4.b Requirements for Cement Plant, Coal Preparation/Coal Mill Systems	Answer: Continuous Method:

	For the equipment constructed or modified after April 28, 2008, did the Permittee conduct repeat performance tests according to the following requirements? (1) If any 6-minute average opacity reading in the most recent performance test exceeds half the applicable opacity limit, a new performance test must be conducted within 90 operating days of the date that the previous performance test was required to be completed. (2) If all 6-minute average opacity readings in the most recent performance test are equal to or less than half the applicable opacity limit, a new performance test shall be conducted within 12 calendar months of the date that the previous performance test was required to be completed.	Other Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
170	ATTACHMENT C.III.C.5.a Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee use Method 9 of appendix A–4 of 40 CFR 60 to determine opacity with the following exceptions? (1) The duration of the Method 9 performance test shall be 1 hour (ten 6-minute averages). (2) If, during the initial 30 minutes of the observation of a Method 9 performance test, all of the 6-minute average opacity readings are less than or equal to half the applicable opacity limit, then the observation period may be reduced from 1 hour to 30 minutes.	Answer: Continuous Method: Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
171	ATTACHMENT C.III.C.5.b Requirements for Cement Plant, Coal Preparation/Coal Mill Systems To determine opacity for fugitive coal dust emissions sources, were the following additional requirements used? (1) The minimum distance between the observer and the emission source shall be 5.0 meters (16 feet), and the sun shall be oriented in the 140-degree sector of the back. (2) The observer shall select a position that minimizes interference from other fugitive coal dust emissions sources and make observations such that the line of vision is	Answer: Continuous Method: Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No

	approximately perpendicular to the plume and wind direction. (3) The observer shall make opacity observations at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. Water vapor is not considered a visible emission.	
172	ATTACHMENT C.III.C.5.c Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did a visible emissions observer conduct any visible emissions observations for up to three fugitive, stack or vent emission points within a 15-second interval?	Answer: YES
172.1	ATTACHMENT C.III.C.5.c(1)-(3) Requirements for Cement Plant, Coal Preparation/Coal Mill Systems For all visible emissions observations conducted for up to three fugitive, stack or vent emission points within a 15 second interval were the following conditions met? (1) No more than three emissions points may be read concurrently. (2) All three emissions points must be within a 70 degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points. (3) If an opacity reading for any one of the three emissions points is within 5 percent opacity from the applicable standard (excluding readings of zero opacity), then the observer must stop taking readings for the other two points and continue reading just that single point.	Answer: Continuous Method: Other Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
173	ATTACHMENT C.III.C.6 Requirements for Cement Plant, Coal Preparation/Coal Mill Systems These requirements are applicable for affected facilities constructed or modified after April 28, 2008. Click "Yes" to continue if the applicable facilities operated during the compliance period.	Answer: YES
173.1	ATTACHMENT C.III.C.6.a Requirements for Cement Plant, Coal Preparation/Coal Mill Systems	Answer: Continuous Method:

	Did the Permittee maintain in a logbook (written or electronic) on-site and make it available upon request? The logbook shall record the information required by Condition III.C.6.a(1)-(10) of Attachment "C".	Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
173.2	ATTACHMENT C.III.C.6.b Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee report semiannually all 6-minute average opacities that exceed the applicable standard?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
173.3	ATTACHMENT C.III.C.6.c Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee submit the results of initial performance tests to the Director?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
174	ATTACHMENT C.III.C.6.d Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee conduct any opacity performance tests during the compliance period?	Answer: NO
175	ATTACHMENT C.III.D.1 Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee not cause to be discharged into the atmosphere from any conveying system transfer point from any coal mill to the kiln any gases which exhibit greater than 10 percent opacity?	Answer: Continuous Method: Other Visible Emission Surveys Additional Remarks: Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
176	ATTACHMENT C.III.D.2.a-c Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Did the Permittee conduct visible emissions tests of each affected source in accordance with Method 22 of Appendix	Answer: Continuous Method: Visible Emission Surveys

	A–7 to 40 CFR 60 during the compliance period? The performance test must be conducted while the affected source is in operation.	Supporting Documents Needed: No Supporting Documents Provided:No
177	ATTACHMENT C.III.D.2.b, c Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Were the visible emissions tests conducted either semi-annually or annually during the compliance period?	Answer: YES
177.1	ATTACHMENT C.III.D.2.b, c Requirements for Cement Plant, Coal Preparation/Coal Mill Systems If the visible emissions tests were conducted semi-annually, were no visible emissions observed in 6 consecutive monthly tests for any affected source? Or If the visible emissions tests were conducted annually, were no visible emissions observed during the previous semi-annual visible emissions test in accordance with III.D.2.c of Attachment "C".	Answer: Continuous Method: Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
177.2	ATTACHMENT C.III.D.2.b, c Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Were any visible emissions observed during the semi-annual or annual visible emissions test?	Answer: NO
178	ATTACHMENT C.III.D.2.d, e Requirements for Cement Plant, Coal Preparation/Coal Mill Systems If visible emissions are observed during any Method 22 performance test, did the Permittee conduct 30 minutes of opacity observations, recorded at 15-second interval in accordance with Method 9 of Appendix A–4 to 40 CFR 60? The Method 9 performance test shall begin within 1 hour of any observation of visible emissions. The requirements to conduct Method 22 visible emissions monitoring do not apply to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. The enclosures for these transfer points shall be operated and maintained as total enclosures on a continuing basis in	Answer: Continuous Method: Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No

	accordance with the facility operations and maintenance plan.	
179	ATTACHMENT C.III.D.2.f Requirements for Cement Plant, Coal Preparation/Coal Mill Systems If any partially enclosed or unenclosed conveying system transfer point is located in a building, did the Permittee conduct a Method 22 performance test according to the requirements of III.D.2(a) through (d) of Attachment "C" for each such conveying system transfer point located within the building, or for the building itself, according to III.D.2(g) of Attachment "C"?	Answer: Continuous Method: Recordkeeping Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
180	ATTACHMENT C.III.D.2.g Requirements for Cement Plant, Coal Preparation/Coal Mill Systems If visible emissions from a building are monitored, did the Permittee also test visible emissions from each side, roof, and vent of the building for at least 10 minutes? If visible emissions from a building are monitored, the requirements of conditions III.D.2.a-d of Attachment "C" apply to the monitoring of the building.	Answer: Continuous Method: Recordkeeping Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
181	ATTACHMENT C.III.D.3.a, b Requirements for Cement Plant, Coal Preparation/Coal Mill Systems For the dust collectors H3-K4-DC1 & -DC2, to demonstrate compliance with the opacity standard, did the Permittee conduct performance test in once the permit term in accordance with EPA Reference Method 9 of 40 CFR Part 60, Appendix A? The maximum 6-minute average opacity exhibited during the test period shall be used to determine whether the affected source is in initial compliance with the opacity standard.	Answer: Continuous Method: Recordkeeping Method 9 Opacity Observations Additional Remarks: Opacity testing of the dust collectors was conducted on 12/18/2025. Supporting Documents Needed: No Supporting Documents Provided:No
182	ATTACHMENT C.III.D.3.c Requirements for Cement Plant, Coal Preparation/Coal Mill Systems Was the duration of the Method 9 performance test 3 hours	Answer: Continuous Method: Recordkeeping

	(thirty 6-minute averages), except that the duration of the Method 9 performance test may be reduced to 1 hour if the following Conditions are met? (1) There are no individual readings greater than 10 percent opacity; (2) There are no more than three readings of 10 percent for the first 1-hour period.	Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
183	ATTACHMENT C.IV.A Requirements for Cement Plant, Open Clinker Piles Did the Permittee operate an open clinker pile in accordance with the fugitive dust emissions control measures that are appropriate for the site conditions and described in the operation and maintenance plan under Condition II.A.2 of Attachment "C"?	Answer: Continuous Method: Other Recordkeeping Method 9 Opacity Observations Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
184	ATTACHMENT C.IV.B.1 Requirements for Cement Plant, Open Clinker Piles Did the operations and maintenance plan describe the measures the Permittee will use to minimize fugitive dust emissions from piles of clinkers, such as accidental spillage, that are not part of open clinker storage piles?	Answer: Continuous Method: Operation & Maintenance Plans Supporting Documents Needed: No Supporting Documents Provided:No
185	ATTACHMENT C.IV.B.2 Requirements for Cement Plant, Open Clinker Piles Did the operation and maintenance plan identify and describe the location of each current or future open clinker storage pile and the fugitive dust emissions control measures? The Permittee shall use to minimize fugitive dust emissions from each open clinker storage pile.	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
186	ATTACHMENT C.IV.B.3 Requirements for Cement Plant, Open Clinker Piles For open clinker storage piles, did the operations and	Answer: Continuous Method: Operation & Maintenance Plans

	maintenance plan specify that one or more of the following control measures will be used to minimize to the greatest extent practicable fugitive dust from open clinker storage piles? a. Locating the source inside a partial enclosure; b. Installing and operating a water spray or fogging system; c. Applying appropriate chemical dust suppression agents; and d. Use of a wind barrier, compaction, use of tarpaulin or other effective cover, or use of a vegetative cover.	Supporting Documents Needed: No Supporting Documents Provided:No
187	ATTACHMENT C.IV.B.4 Requirements for Cement Plant, Open Clinker Piles Did the Permittee select, for inclusion in the operations and maintenance plan, the fugitive dust control measure or measures listed in Condition IV.B.3.a-d of Attachment "C" that are most appropriate for site conditions? The plan shall also explain how the measure or measures selected are applicable and appropriate for site conditions. In addition, the plan shall be revised as needed to reflect any changing conditions at the source.	Answer: Continuous Method: Operation & Maintenance Plans Supporting Documents Needed: No Supporting Documents Provided:No
188	ATTACHMENT C.IV.B.5 Requirements for Cement Plant, Open Clinker Piles Were temporary piles of clinker that result from accidental spillage or clinker storage cleaning operations cleaned up within 3 days?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
189	ATTACHMENT C.V.A.1, 2 Requirements for Cement Plant, Clinker Production Did the Permittee 1. Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of clinker produced? The system of measuring hourly clinker	Answer: YES

	production must be maintained within ±5 percent accuracy. Or 2. Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of feed to the kiln? The system of measuring feed shall be maintained within ±5 percent accuracy.	
189.1	ATTACHMENT C.V.A.2 Requirements for Cement Plant, Clinker Production Did the Permittee comply with Condition V.A of Attachment "C" using the method described in Condition V.A.2 of Attachment "C"?	Answer: YES
189.1.1	ATTACHMENT C.V.A.2 Requirements for Cement Plant, Clinker Production Did the Permittee calculate the hourly clinker production rate using a kiln-specific feed to clinker ratio based on reconciled clinker production determined for accounting purposes and recorded feed rates?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Monitoring, Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
189.1.2	ATTACHMENT C.V.A.2 Requirements for Cement Plant, Clinker Production Did the Permittee update the kiln-specific feed to clinker ratio monthly?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
189.1.3	ATTACHMENT C.V.A.2 Requirements for Cement Plant, Clinker Production If the kiln-specific feed to clinker ratio changed at clinker reconciliation , did the Permittee use the new ratio going forward? The Permittee shall not have to retroactively change clinker production rates previously estimated.	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Facility Procedures Supporting Documents Needed: No

		Supporting Documents Provided:No
190	ATTACHMENT C.V.B.1 Requirements for Cement Plant, Clinker Production During each quarter of the operation, did the Permittee determine, record, and maintain a record of the ongoing accuracy of the system of measuring hourly clinker production or feed mass flow rates?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Facility Procedures Supporting Documents Needed: No Supporting Documents Provided:No
191	ATTACHMENT C.V.B.2 Requirements for Cement Plant, Clinker Production Did the Permittee maintain records of hourly kiln feed rates and hourly clinker production rates?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
192	ATTACHMENT C.V.B.3 Requirements for Cement Plant, Clinker Production Did the Permittee keep records of the daily clinker production rates and kiln feed rates?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
193	ATTACHMENT C.VI.B.1.a(1) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee not cause to be discharged into the atmosphere from any kiln and clinker cooler any gases which contain particulate matter in excess of 0.07 pounds per ton clinker?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
194	ATTACHMENT C.VI.B.1.a(1) Requirements for Cement Plant,	Answer: Continuous

	Kilns And Clinker Coolers Did the Permittee not cause, allow or permit the discharge of particulate matter from Kilns 1, 2, 3, and 4 to exceed the amounts calculated by one of the following equations? (a) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation: E = 4.10 * P^0.67 where: E = the maximum allowable particulate emissions rate in pounds-mass per hour. P = the process weight rate in tons-mass per hour. (b) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation: E =55.0 * P^0.11 - 40 where "E" and "P" are defined as indicated in Condition VI.B.1.a(2)(a) of Attachment “C”.	Method: Other Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln 4 - Work Practices, Emission Calculations. Supporting Documents Needed: No Supporting Documents Provided:No
195	ATTACHMENT C.VI.B.1.a(3) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee not cause to be discharged into the atmosphere from Kilns 1, 2, 3, and 4 and clinker coolers for Kilns 1, 2 and 3 any gases which exhibit opacity greater than 20 percent?	Answer: Continuous Method: Method 9 Opacity Observations Visible Emission Surveys Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Excess Emissions Report ID 161131and 172089 was submitted on 11/07/2025 and 02/06/2026, respectively. Supporting Documents Needed: No Supporting Documents Provided:No
196	ATTACHMENT C.VI.B.1.a(4) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee not cause to be discharged into the atmosphere from Dust Collector H5-5-GB for Kilns 1, 2 and 3, and H5-GB for in-line kiln/raw mill Kiln 4 any gases which contain PM10 in excess of 0.008 gr/dscf?	Answer: Continuous Method: Performance/Source Testing Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions.

		Supporting Documents Needed: No Supporting Documents Provided:No
197	ATTACHMENT C.VI.B.1.b Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee not cause to be discharged into the atmosphere from any clinker cooler, any gases which contain particulate matter in excess of 0.07 pounds per ton clinker?	Answer: Continuous Method: Performance/Source Testing Recordkeeping Additional Remarks: Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
198	ATTACHMENT C.VI.B.1.b Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee not cause, allow or permit the discharge of particulate matter from the clinker coolers for Kilns 1, 2, 3, and 4 to exceed the amounts calculated by the equations in Condition VI.B.1.a(2) of Attachment “C”?	Answer: Continuous Method: Other Additional Remarks: Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Clinker Cooler 4 - Emission Calculations. Supporting Documents Needed: No Supporting Documents Provided:No
199	ATTACHMENT C.VI.B.1.b Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee not cause to be discharged into the atmosphere from the clinker coolers for Kilns 1, 2, 3, and 4 any gases which exhibit opacity greater than 20 percent?	Answer: Intermittent Explain Why: H3-K4-K flushed due to a fuel imbalance. H3-K3-BS1 metal detector alarmed, so the belt stopped due to a metal detect. The short moment without a proper fuel balance caused the material to go raw and go through the H2-GB which led to measured excess emissions out of the H2 stack. For the other cause of the excess emission, a compartment got isolated due to material build up, forcing the compartment to isolate. There was a malfunction with the isolation gates which allowed

		the material to accumulate. An employee went to inspect the issue, opened an access point, and material escaped causing excess emissions. Method: Method 9 Opacity Observations Visible Emission Surveys Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Excess Emissions Report ID 161131 and 172089 was submitted on 11/07/2025 and 02/06/2026, respectively. Supporting Documents Needed: No Supporting Documents Provided:No
200	ATTACHMENT C.VI.B.2.a Requirements for Cement Plant, Kilns And Clinker Coolers At all times, including periods of startup, shutdown, and malfunction, did the Permittee operate and maintain all the Dust Collectors H5-5-GB for Kilns 1-3, and H5-GB for Kiln 4 in-line kiln/ raw mill.in a manner consistent with good air pollution control practice for minimizing PM and PM10 emissions? This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.	Answer: Continuous Method: Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln 4 - Facility Procedures, Work Practices. Supporting Documents Needed: No Supporting Documents Provided:No
201	ATTACHMENT C.VI.B.2.b Requirements for Cement Plant, Kilns And Clinker Coolers At all times including periods of startup, shutdown, and malfunction, did the Permittee, maintain and operate Dust Collectors H2-1-DC when Clinker Cooler 1 is in operation, H2-2-DC when Clinker Cooler 2 is in operation, H2-3-DC when Clinker Cooler 3 is in operation, and H2-GB when Clinker Cooler 4 is in operation in a manner consistent with	Answer: Continuous Method: Recordkeeping Additional Remarks: Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Clinker Cooler 4 - Facility Procedures, Work Practices. Supporting Documents Needed: No

	good air pollution control practice for minimizing PM and PM10 emissions? This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.	Supporting Documents Provided:No
202	ATTACHMENT C.VI.B.3.a(1) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee install, operate, calibrate, and maintain PM CPMS on the Kiln 1-3 stack, Kiln 4 in-line kiln/ raw mill stack, and Clinker Coolers 1, 2, 3 and 4 stacks to demonstrate continuous compliance with the established operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Operation & Maintenance Plans Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln/Clinker Cooler 4 - Procedures, Work Practices. Supporting Documents Needed: No Supporting Documents Provided:No
203	ATTACHMENT C.VI.B.3.a(1)(a) Requirements for Cement Plant, Kilns And Clinker Coolers Did the PM CPMS provide a 4-20 milliamp output or digital signal output and the establishment of its relationship to the manual reference method measurements shall be determined in units of milliamps or the monitors digital equivalent?	Answer: Continuous Method: Other Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln/Clinker Cooler 4 - Procedures, Work Practices. Supporting Documents Needed: No Supporting Documents Provided:No
204	ATTACHMENT C.VI.B.3.a(1)(b) Requirements for Cement Plant, Kilns And Clinker Coolers Was the PM CPMS operating range capable of reading PM concentrations from zero to a level equivalent to three times the Permittee's allowable emission limit?	Answer: Continuous Method: Other Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln/Clinker Cooler 4 - Facility

		Procedures. Supporting Documents Needed: No Supporting Documents Provided:No
205	ATTACHMENT C.VI.B.3.a(1)(b) Requirements for Cement Plant, Kilns And Clinker Coolers Was the PM CPMS an auto-ranging instrument capable of multiple scales?	Answer: NO
206	ATTACHMENT C.VI.B.3.a(1)(c) Requirements for Cement Plant, Kilns And Clinker Coolers During the initial or subsequent performance tests to demonstrate compliance with the PM limits, did the Permittee record and average all milliamp or digital output values from the PM CPMS for the periods corresponding to the compliance test runs (e.g., average all the PM CPMS output values for three corresponding 2-hour Method 5 or Method 5I test runs)?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Performance/Source Testing Recordkeeping Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln/Clinker Cooler 4 - Facility Procedures. Supporting Documents Needed: No Supporting Documents Provided:No
207	ATTACHMENT C.VI.B.3.a(2) Requirements for Cement Plant, Kilns And Clinker Coolers To determine continuous compliance, did the Permittee use the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln/Clinker Cooler 4 - Facility Procedures. Supporting Documents Needed: No Supporting Documents Provided:No
208	ATTACHMENT C.VI.B.3.a(2) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee demonstrate continuous compliance by	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS)

	using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps or the digital equivalent) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day?	Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln/Clinker Cooler 4 - Facility Procedures. Supporting Documents Needed: No Supporting Documents Provided:No
209	ATTACHMENT C.VI.B.3.a(2) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee use equation 7 in 40 CFR 1349(b)(1)(v) to calculate 30 kiln operating day average?	Answer: Continuous Method: Other Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln/Clinker Cooler 4 - Facility Procedures. Supporting Documents Needed: No Supporting Documents Provided:No
210	ATTACHMENT C.VI.B.3.a(3) Requirements for Cement Plant, Kilns And Clinker Coolers Were there any exceedances of the 30 process operating day PM CPMS average value from the established operating parameter limit during the compliance period?	Answer: NO
211	ATTACHMENT C.VI.B.3.a(4) Requirements for Cement Plant, Kilns And Clinker Coolers Were there any PM CPMS exceedances leading to more than four required performance tests in a 12-month process operating period (rolling monthly)?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Performance/Source Testing Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
212	ATTACHMENT C.VI.B.3.b(1) Requirements for Cement Plant,	Answer: Continuous

	Kilns And Clinker Coolers Did the Permittee conduct a monthly 10-minute visible emissions tests of each affected source in accordance with Method 22 of Appendix A–7 to 40 CFR 60? The performance test must be conducted while the affected source is in operation.	Method: Method 9 Opacity Observations Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
213	ATTACHMENT C.VI.B.3.b(2), (3) Requirements for Cement Plant, Kilns And Clinker Coolers Were the visible emissions tests conducted either semi-annually or annually during the compliance period?	Answer: YES
213.1	ATTACHMENT C.VI.B.3.b(2), (3) Requirements for Cement Plant, Kilns And Clinker Coolers If the visible emissions tests were conducted semi-annually, were no visible emissions observed in 6 consecutive monthly tests for any affected source? Or If the visible emissions tests were conducted annually, were no visible emissions observed during the previous semi-annual visible emissions test in accordance with III.D.2.c of Attachment "C".	Answer: Continuous Method: Recordkeeping Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
213.2	ATTACHMENT C.VI.B.3.b(2), (3) Requirements for Cement Plant, Kilns And Clinker Coolers Were any visible emissions observed during the semi-annual or annual visible emissions test?	Answer: NO
214	ATTACHMENT C.VI.B.4.a(1) Requirements for Cement Plant, Kilns And Clinker Coolers Was the Permittee required to demonstrate initial compliance during the reporting period?	Answer: NO
215	ATTACHMENT C.VI.B.4.a(3) Requirements for Cement Plant, Kilns And Clinker Coolers	Answer: Continuous Method:

	During the initial or subsequent performance tests, did the Permittee establish the operating limit for the PM CPMS for each stack in accordance with the following procedures? (a) If the average of the three EPA Reference Method 5 or 5I compliance test runs is below 75 percent of the PM emission limit, the Permittee shall calculate an operating limit by establishing a relationship of PM CPMS signal to PM concentration using the PM CPMS instrument zero, the average PM CPMS values corresponding to the three compliance test runs, and the average PM concentration from the EPA Reference Method 5 or 5I compliance test with the procedures in 40 CFR 63.1349(b)(1)(iii)(A) through (D). (b) If the average of the three PM compliance test runs is at or above 75 percent of the PM emission limit, The Permittee shall determine the operating limit by averaging the PM CPMS milliamp output corresponding to the three PM performance test runs that demonstrate compliance with the emission limit using Equation 6 in 40 CFR 63.1349(b)(1)(iv).	Continuous Emissions Monitoring System (CEMS) Performance/Source Testing Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
216	ATTACHMENT C.VI.B.4.a(4) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee repeat the performance tests at least annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Clinker Cooler Baghouse H2-GB and Kiln 4 Baghouse H5-GB was tested on 02/20/2026. Supporting Documents Needed: No Supporting Documents Provided:No
217	ATTACHMENT C.VI.B.4.a(4) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee also repeat the test if there is a change the analytical range of the instrument, or if the instrument or any principle analytical component of the instrument, that	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Performance/Source Testing Additional Remarks: There were no changes to the

	would alter the relationship of output signal to in-stack PM concentration, is replaced?	instrument, its components, or the analytical range that would trigger a performance test. Supporting Documents Needed: No Supporting Documents Provided:No
218	ATTACHMENT C.VI.B.4.a(5), B.4.a(5)(c)-(d) Requirements for Cement Plant, Kilns And Clinker Coolers For each performance test, did the Permittee conduct at least three separate test runs under the conditions that exist when the affected source is operating at the highest load or capacity level reasonably expected to occur? The Permittee need not determine the particulate matter collected in the impingers ("back half") of the EPA Reference Method 5 or Method 5I particulate sampling train to demonstrate compliance with the PM standards. This shall not preclude the permitting authority from requiring a determination of the "back half" for other purposes.	Answer: Continuous Method: Performance/Source Testing Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
219	ATTACHMENT C.VI.B.4.a(5)(a) Requirements for Cement Plant, Kilns And Clinker Coolers For each test run, did the Permittee collect a minimum sample volume of 2 dscm for determining compliance with a new source limit and 1 dscm for determining compliance with an existing source limit?	Answer: Continuous Method: Performance/Source Testing Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
220	ATTACHMENT C.VI.B.4.a(5)(b) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee calculate the average of the results from three consecutive runs?	Answer: Continuous Method: Performance/Source Testing Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No

		Supporting Documents Provided:No
221	ATTACHMENT C.VI.B.4.a(6) Requirements for Cement Plant, Kilns And Clinker Coolers For PM performance test reports used to set a PM CPMS operating limit, did the electronic submission of the test report also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (e.g. beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp or digital equivalent signals corresponding to each PM compliance test run?	Answer: Continuous Method: Reporting Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
222	ATTACHMENT C.VI.B.4.a(7) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee conduct performance tests annually for dust collectors H5-5-GB and H5-GB to determine compliance with the PM10 emission limit in Condition VI.B.1.a(4) of Attachment "C" in accordance with EPA Reference Method 5 or Method 201A?	Answer: Continuous Method: Performance/Source Testing Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 and corresponding Baghouse H5-5-GB did not operate during this compliance period due to market conditions. Kiln 4 Baghouse H5-GB was tested on 02/20/2026. Supporting Documents Needed: No Supporting Documents Provided:No
223	ATTACHMENT C.VI.C.1 Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee not cause to be discharged into the atmosphere from any kiln any gases which contain dioxins and furans (D/F) in excess of 0.2 ng/dscm TEQ*, measured on dry basis and corrected to 7% oxygen? If the average temperature at the inlet to the first particulate matter control device during the D/F performance test is 400 °F or less, the D/F emissions limit shall not exceed 0.4 ng/dscm	Answer: Continuous Method: Parametric Monitoring Recordkeeping Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No

	(TEQ). *TEQ means the international method of expressing toxicity equivalents for dioxins and furans as defined in US EPA, Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxins and –dibenzofurans (CDDs and CDFs) and 1989 update, March 1989.	Supporting Documents Provided:No
224	ATTACHMENT C.VI.C.2.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee operate Kilns 1-3 during the compliance period?	Answer: NO
225	ATTACHMENT C.VI.C.2.b(1) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee operate Kiln 4 in-line kiln/ raw mill such that, when In-Line Raw Mill is operating, the flue temperature at the inlet to the PMCD shall not exceed the applicable exhaust temperature limit determined in accordance with Condition VI.C.4.a(4) of Attachment "C" and established during the performance test when the raw mill was operating, except during periods of startup/shutdown when the temperature limit may be exceeded by no more than 10 percent?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
226	ATTACHMENT C.VI.C.2.b(2) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee operate Kiln 4 in-line kiln/ raw mill such that, when In-Line Raw Mill is not operating, the flue temperature at the inlet to PMCD shall not exceed the applicable exhaust temperature limit determined in accordance with Condition VI.C.4.a(4) of Attachment "C" and established during the performance test when the raw mill was not operating, except during periods of startup/shutdown when the temperature limit may be exceeded by no more than 10 percent?	Answer: Continuous Method: Parametric Monitoring Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

227	ATTACHMENT C.VI.C.2.c Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee employ sorbent injection as an emission control technique for D/F control?	Answer: NO
228	ATTACHMENT C.VI.C.3.a(1) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee operate a continuous monitoring system (CMS) to record the temperatures of the exhaust gases from Kilns 1-3, and Kiln 4 in-line kiln/ raw mill at the inlet to, or upstream of, PM control devices, and monitor and continuously record the temperature of the exhaust gases?	Answer: Continuous Method: Recordkeeping Additional Remarks: Kilns/Clinker Coolers 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln 4 Baghouse H5-GB was tested on 02/20/2026. Supporting Documents Needed: No Supporting Documents Provided:No
229	ATTACHMENT C.VI.C.3.a(1)(a) Requirements for Cement Plant, Kilns And Clinker Coolers Did the temperature recorder response range include zero and 1.5 times the average temperature established according to the requirements in Condition VI.C.4.a(4) of Attachment "C"?	Answer: Continuous Method: Other Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln 4 - Work Practices. Supporting Documents Needed: No Supporting Documents Provided:No
230	ATTACHMENT C.VI.C.3.a(1)(b) Requirements for Cement Plant, Kilns And Clinker Coolers Was the calibration reference for the temperature measurement a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or alternate reference, subject to approval by the Administrator?	Answer: Continuous Method: Other Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln 4 - Facility Procedures. Supporting Documents Needed: No Supporting Documents Provided:No
231	ATTACHMENT C.VI.C.3.a(1)(c) Requirements for Cement	Answer: Continuous

	Plant, Kilns And Clinker Coolers Was the calibration of all thermocouples and other temperature sensors verified at least once every three months?	Method: Operation & Maintenance Plans Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
232	ATTACHMENT C.VI.C.3.a(1)(c) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee monitor and continuously record the temperature of the exhaust gases from the Kilns 1-3 or Kiln 4 in-line kiln/ raw mill at the inlet to the PMCDs?	Answer: Continuous Method: Parametric Monitoring Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
233	ATTACHMENT C.VI.C.3.a(3) Requirements for Cement Plant, Kilns And Clinker Coolers Was the required minimum data collection frequency one minute?	Answer: Continuous Method: Parametric Monitoring Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
234	ATTACHMENT C.VI.C.3.a(4) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee calculate the three-hour average temperature using the average of 180 successive one-minute	Answer: Continuous Method: Parametric Monitoring Recordkeeping

	average temperatures?	Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
235	ATTACHMENT C.VI.C.3.a(5) Requirements for Cement Plant, Kilns And Clinker Coolers When the operating status of the raw mill of the in-line kiln/raw mill is changed from off to on or from on to off, did the calculation of the three-hour rolling average temperature begin anew, without considering previous recordings?	Answer: Continuous Method: Recordkeeping Parametric Monitoring Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
236	ATTACHMENT C.VI.C.3.b(1) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee install, calibrate, operate and maintain a continuous monitor to record the rate of activated carbon injection in accordance with the requirements below)? The accuracy of the rate measurement device must be ±1 percent of the rate being measured.	Answer: Continuous Method: Other Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
237	ATTACHMENT C.VI.C.3.b(1)(a) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee locate the device in a position(s) that provides a representative measurement of the total sorbent injection rate?	Answer: Continuous Method: Other Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
238	ATTACHMENT C.VI.C.3.b(1)(b) Requirements for Cement	Answer: Continuous

	Plant, Kilns And Clinker Coolers Did the Permittee install and calibrate the device in accordance with the manufacturer's procedures and specifications?	Method: Other Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
239	ATTACHMENT C.VI.C.3.b(1)(c) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee, at least annually, calibrate the device in accordance with the manufacturer's procedures and specifications?	Answer: Continuous Method: Other Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
240	ATTACHMENT C.VI.C.3.b(1)(d) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee verify the calibration of the device at least once every three months?	Answer: Continuous Method: Other Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
241	ATTACHMENT C.VI.C.3.b(1)(e) Requirements for Cement Plant, Kilns And Clinker Coolers Each hour, did the Permittee calculate the three-hour rolling average activated carbon injection rate for the previous three hours of process operation?	Answer: Continuous Method: Other Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
242	ATTACHMENT C.VI.C.3.b(1)(f) Requirements for Cement Plant, Kilns And Clinker Coolers	Answer: Continuous Method:

	When the operating status of the raw mill of the in-line kiln/raw mill is changed from off to on or from on to off, did the calculation of the three-hour rolling average activated carbon injection rate begin anew, without considering previous recordings?	Other Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
243	ATTACHMENT C.VI.C.3.b(2)(a) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee install, calibrate, operate and maintain a continuous monitor to record the activated carbon injection system carrier gas parameter (either the carrier gas flow rate or the carrier gas pressure drop) established during the D/F performance test in accordance with Condition VI.C.4.a of Attachment "C"?	Answer: Continuous Method: Other Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
244	ATTACHMENT C.VI.C.3.b(2)(b) Requirements for Cement Plant, Kilns And Clinker Coolers If the carrier gas flow rate is used, did the Permittee determine, record, and maintain a record of the accuracy of the carrier gas flow rate monitoring system according to the procedures in appendix A to 40 CFR 75?	Answer: Continuous Method: Other Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
245	ATTACHMENT C.VI.C.3.b(2)(c) Requirements for Cement Plant, Kilns And Clinker Coolers If the carrier gas pressure drop is used, did the Permittee determine, record, and maintain a record of the accuracy of the carrier gas pressure drop monitoring system according to the procedures in Condition VI.C.3.b(2)(c) of Attachment "C"?	Answer: Continuous Method: Other Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
246	ATTACHMENT C.VI.C.3.b(2)(d) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee calculate each hour the three-hour rolling	Answer: Continuous Method: Other

	average of the selected parameter value for the previous 3 hours of process operation using all of the one-minute data available (i.e., the CMS is not out-of-control.?	Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
247	ATTACHMENT C.VI.C.4.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee conduct performance tests on the kilns using Method 23 of Appendix A-7 to 40 CFR 60?	Answer: Continuous Method: Performance/Source Testing Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. A D/F test was conducted on Kiln 4 on 3/24/2026. Supporting Documents Needed: No Supporting Documents Provided:No
248	ATTACHMENT C.VI.C.4.a Requirements for Cement Plant, Kilns And Clinker Coolers For Kiln 4 in-line kiln/ raw mill, did the Permittee conduct a performance test when the raw mill of the in-line kiln/raw mill is operating or not operating?	Answer: Continuous Method: Performance/Source Testing Supporting Documents Needed: No Supporting Documents Provided:No
249	ATTACHMENT C.VI.C.4.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee conduct any performance test during the reporting period?	Answer: YES
249.1	ATTACHMENT C.VI.C.4.a(1) Requirements for Cement Plant, Kilns And Clinker Coolers Did each performance test consist of three separate runs conducted under representative conditions, with the duration of each run at least 3 hours, and the sample volume for each run at least 2.5 dscm (90 dscf)?	Answer: Continuous Method: Performance/Source Testing Supporting Documents Needed: No Supporting Documents Provided:No
249.2	ATTACHMENT C.VI.C.4.aC.4.a(2) Requirements for Cement	Answer: Continuous

	Plant, Kilns And Clinker Coolers Was the temperature at the inlet to the kiln or in-line kiln/raw mill PMCD continuously recorded during the period of the Method 23 test, and the continuous temperature record(s) shall be included in the performance test report?	Method: Performance/Source Testing Supporting Documents Needed: No Supporting Documents Provided:No
249.3	ATTACHMENT C.VI.C.4.a(3) Requirements for Cement Plant, Kilns And Clinker Coolers Were average temperatures calculated for each run of the performance test?	Answer: Continuous Method: Performance/Source Testing Supporting Documents Needed: No Supporting Documents Provided:No
249.4	ATTACHMENT C.VI.C.4.aC.4.a(4) Requirements for Cement Plant, Kilns And Clinker Coolers Was the run average temperature calculated for each run, and the average of the run average temperatures determined and included in the performance test report and determine the applicable temperature limits in Conditions VI.C.2.a and VI.C.2.b of Attachment "C"?	Answer: Continuous Method: Performance/Source Testing Supporting Documents Needed: No Supporting Documents Provided:No
250	ATTACHMENT C.VI.C.4.c Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee repeat the performance test between 29 and 31 calendar months after the previous performance test?	Answer: Continuous Method: Performance/Source Testing Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. A D/F test was conducted on Kiln 4 on 03/24/2026. Supporting Documents Needed: No Supporting Documents Provided:No
251	ATTACHMENT C.VI.C.5.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee demonstrate initial compliance with the D/F emissions standards by using the performance test	Answer: Continuous Method: Performance/Source Testing Additional Remarks: Kilns 1, 2, and 3 did not operate

	methods and procedures in Condition VI.C.4.a of Attachment "C"?	during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
252	ATTACHMENT C.VI.C.5.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee determine the D/F TEQ concentration for each run and calculate the arithmetic average of the TEQ concentrations measured for the three runs to determine continuous compliance?	Answer: Continuous Method: Performance/Source Testing Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
253	ATTACHMENT C.VI.C.5.b Requirements for Cement Plant, Kilns And Clinker Coolers For Kiln 4, did the Permittee demonstrate initial compliance with the D/F emissions standards by using the performance test methods and procedures in Condition VI.C.4.a of Attachment "C", and by conducting separate performance tests while the raw mill is operating and the raw mill is not operating?	Answer: Continuous Method: Performance/Source Testing Supporting Documents Needed: No Supporting Documents Provided:No
254	ATTACHMENT C.VI.C.5.c Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee demonstrate continuous compliance with the temperature operating limits specified in Conditions VI.C.2.a and VI.C.2.b of Attachment "C" by using the performance test methods and procedures in Conditions VI.C.4.a(2) through VI.C.4.a(4) of Attachment "C"?	Answer: Continuous Method: Parametric Monitoring Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
255	ATTACHMENT C.VI.C.5.d Requirements for Cement Plant,	Answer: Continuous

	Kilns And Clinker Coolers If activated carbon injection is used, did the Permittee demonstrate compliance with the activated carbon injection rate operating limits specified in Condition VI.C.2.c of Attachment “C” by using the performance test methods and procedures in Condition VI.C.4.b(1) of Attachment “C”?	Method: Other Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
256	ATTACHMENT C.VI.C.5.e Requirements for Cement Plant, Kilns And Clinker Coolers If activated carbon injection is used, did the Permittee also develop a carrier gas parameter (either the carrier gas flow rate or the carrier gas pressure drop) during the initial performance test and updated during any subsequent performance test conducted under Condition VI.C.4.a of Attachment “C” that meets the requirements of Condition VI.C.4.b(3) of Attachment "C"?	Answer: Continuous Method: Other Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
257	ATTACHMENT C.VI.C.5.e Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee demonstrate compliance with the carrier gas parameter (either the carrier gas flow rate or the carrier gas pressure drop) by maintaining it within ± 5 percent of the value established during the performance test?	Answer: Continuous Method: Other Additional Remarks: Not applicable - activated carbon injection is not used at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
258	ATTACHMENT C.VI.D.1 Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee not cause to be discharged into the atmosphere from Kiln 1-3 stack, and Kiln 4 in-line kiln/ raw mill stack any gases which contain THC more than 24 ppmvd, measured as propane? THC emission limit is on dry basis, corrected to 7% oxygen, and based on rolling 30-day average. The Permittee may elect to meet an alternative limit of 12 ppmvd for total organic HAP. Total organic HAP means the sum of the concentrations of compounds of	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Performance/Source Testing Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No

	formaldehyde, benzene, toluene, styrene, m-xylene, p-xylene, o-xylene, acetaldehyde, and naphthalene as measured by EPA Test Method 320 or Method 18 of appendix A to 40 CFR 63 or ASTM D6348-03 or a combination of these methods, as appropriate. If measurement results for any pollutant are reported as below the method detection level (e.g., laboratory analytical results for one or more sample components are below the method defined analytical detection level), the Permittee must use the method detection level as the measured emissions level for that pollutant in calculating the total organic HAP value. The measured result for a multiple component analysis (e.g., analytical values for multiple Method 18 fractions) may include a combination of method detection level data and analytical data reported above the method detection level.	Supporting Documents Provided:No
259	ATTACHMENT C.VI.D.2.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee, install, operate, and maintain THC continuous emission monitoring systems (CEMS) on the following stacks in accordance with Performance Specification 8 or Performance Specification 8A of Appendix B to 40 CFR Part 60? (1) Kilns 1-3 stack H5-5-GB (2) Kiln 4 in-line kiln/ raw mill Stack H5-GB.	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Operation & Maintenance Plans Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
260	ATTACHMENT C.VI.D.2.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the CEMS comply with all of the requirements for continuous monitoring systems in 40 CFR 63 Subpart A?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Operation & Maintenance Plans Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market

		conditions. Supporting Documents Needed: No Supporting Documents Provided:No
261	ATTACHMENT C.VI.D.2.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee operate and maintain each CEMS according to the quality assurance requirements in Procedure 1 of Appendix F in 40 CFR Part 60?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Operation & Maintenance Plans Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
262	ATTACHMENT C.VI.D.2.a, b Requirements for Cement Plant, Kilns And Clinker Coolers For THC continuous emission monitoring systems certified under Performance Specification 8A, did the Permittee conduct the relative accuracy test audits required under Procedure 1 in accordance with Performance Specification 8, Sections 8 and 11 using Method 25A in appendix A to 40 CFR part 60 as the reference method; the relative accuracy must meet the criteria of Performance Specification 8, Section 13.2? For the purposes of conducting the accuracy and quality assurance evaluations for CEMS, the THC span value (as propane) is 50 ppmvd and the reference method (RM) is Method 25A of Appendix A to 40 CFR Part 60.	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Performance/Source Testing Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. A THC RATA was conducted on Kiln 4 on 03/25/2026. Supporting Documents Needed: No Supporting Documents Provided:No
263	ATTACHMENT C.VI.D.2.c Requirements for Cement Plant, Kilns And Clinker Coolers Was the THC CEMS measurement scale capable of reading THC concentrations from zero to a level equivalent to two times the highest THC emissions average determined during the performance test, including mill on or mill off operation?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Other Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market

		conditions. Kiln 4 - Equipment Design. Supporting Documents Needed: No Supporting Documents Provided:No
264	ATTACHMENT C.VI.D.2.d Requirements for Cement Plant, Kilns And Clinker Coolers If complying with the total organic HAP emissions limits, did the Permittee continuously monitor THC according to Condition VI.D.2.a of Attachment "C" in accordance with Performance Specification 8 or Performance Specification 8A of Appendix B to 40 CFR Part 60?	Answer: Continuous Method: Other Additional Remarks: Not applicable - the facility does not use a total HAP emission limit in lieu of the THC emission limit. Supporting Documents Needed: No Supporting Documents Provided:No
265	ATTACHMENT C.VI.D.2.d Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee operate and maintain each CEMS according to the quality assurance requirements in Procedure 1 of Appendix F in 40 CFR Part 60?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Other Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln 4 - Facility Procedures. Supporting Documents Needed: No Supporting Documents Provided:No
266	ATTACHMENT C.VI.D.3.a(1) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee use the THC CEMS in Condition VI.D.2.a of Attachment "C" for initial performance test?	Answer: Continuous Method: Performance/Source Testing Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
267	ATTACHMENT C.VI.D.3.a(1) Requirements for Cement Plant,	Answer: Continuous

	Kilns And Clinker Coolers Did the Permittee use the average THC concentration obtained during the first 30 kiln operating days of kiln operation after the compliance date of September 9, 2015?	Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
268	ATTACHMENT C.VI.D.3.a(2) Requirements for Cement Plant, Kilns And Clinker Coolers For Kiln 4, did the Permittee conduct separate performance tests while the raw mill is operating ("mill on") and while the raw mill is not operating ("mill off")?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Performance/Source Testing Supporting Documents Needed: No Supporting Documents Provided:No
269	ATTACHMENT C.VI.D.3.a(2) Requirements for Cement Plant, Kilns And Clinker Coolers Using the fraction of time the raw mill is on and the fraction of time that the raw mill is off, did the Permittee calculate this limit as a weighted average of the THC levels measured during raw mill on and raw mill off compliance testing with the following equation? R = (y * t) + (x * (1 – t)) Where: R = Operating limit as THC, ppmvw. y = Average THC CEMS value during mill on operations, ppmvw. t = Percentage of operating time with mill on. x = Average THC CEMS value during mill off operations, ppmvw. (1- t) = Percentage of operating time with mill off.	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
270	ATTACHMENT C.VI.D.3.b Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee choose to comply with total HAPs emission limit in lieu of the THC emission limit?	Answer: NO

271	ATTACHMENT C.VI.D.3.c Requirements for Cement Plant, Kilns And Clinker Coolers Did the THC level exceed by 10 percent or more the site-specific THC emissions limit during the compliance period?	Answer: NO
272	ATTACHMENT C.VI.D.3.d Requirements for Cement Plant, Kilns And Clinker Coolers If the Permittee chooses to comply with organic HAPs emission limit, did the Permittee repeat the performance test between 29 and 31 calendar months after the previous performance test?	Answer: Continuous Method: Other Additional Remarks: Not applicable - the facility does not use a total HAP emission limit in lieu of he THC emission limit. Supporting Documents Needed: No Supporting Documents Provided:No
273	ATTACHMENT C.VI.D.4.a(1) Requirements for Cement Plant, Kilns And Clinker Coolers Was the Permittee required to demonstrate initial compliance during the compliance period?	Answer: NO
274	ATTACHMENT C.VI.D.4.a(2) Requirements for Cement Plant, Kilns And Clinker Coolers To determine continuous compliance with the THC operating limit, did the Permittee record the THC CEMS output data for all periods when the process is operating and the THC CEMS is not out-of-control?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
275	ATTACHMENT C.VI.D.4.a(2) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee demonstrate continuous compliance by using all quality-assured hourly average data collected by the THC CEMS for all operating hours to calculate the arithmetic	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate

	average operating parameter in units of the operating limit (ppmvw) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day?	during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
276	ATTACHMENT C.VI.D.4.a(2) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee use Equation in Condition VI.D.4.a(2) of Attachment “C” to determine the 30-kiln operating day average?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
277	ATTACHMENT C.VI.D.4.b(1) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee elect to demonstrate compliance with the total organic HAP emissions limit in lieu of the THC emissions limit?	Answer: NO
278	ATTACHMENT C.VI.D.4.b(2) Requirements for Cement Plant, Kilns And Clinker Coolers Was the Permittee required to demonstrate initial compliance for Kiln 4 during the compliance period?	Answer: NO
279	ATTACHMENT C.VI.D.4.b(4) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee demonstrate continuous compliance with condition VI.D.2.d of Attachment "C" using the monitoring methods and procedures in Condition VI.D.2.d of Attachment "C"?	Answer: Continuous Method: Other Additional Remarks: Not applicable - the facility does not use a total HAP emission limit in lieu of the THC emission limit. Supporting Documents Needed: No Supporting Documents Provided:No

280	ATTACHMENT C.VI.E.2.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee not cause to be discharged into the atmosphere from any kiln any gases which contain mercury more than 55 pounds/MM Tons of clinker, based on rolling 30-day average?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: Yes Supporting Documents Provided: PollutantExcessEmissionsReports.pdf
281	ATTACHMENT C.VI.E.2.b Requirements for Cement Plant, Kilns And Clinker Coolers Did no kiln use as a raw material or fuel any fly ash where the mercury content of the fly ash has been increased through the use of activated carbon, or any other sorbent, unless the facility can demonstrate that the use of that fly ash will not result in an increase in mercury emissions over baseline emissions (i.e., emissions not using the fly ash)? The Permittee has the burden of proving there has been no emissions increase over baseline. Once the kiln is in compliance with mercury emission limit specified in Condition VI.E.2.a of Attachment "C", this condition shall no longer be applicable.	Answer: Continuous Method: Other Additional Remarks: Not applicable - activated carbon or other sorbents are not used in processing of raw materials or fly ash at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
282	ATTACHMENT C.VI.E.3 Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee install, calibrate, operate and maintain a mercury continuous emissions monitoring system (Hg CEMS) on the kiln stacks in accordance with Performance Specification 12A of Appendix B to 40 CFR Part 60 or an integrated sorbent trap monitoring system in accordance with Performance Specification 12B (PS 12B) of appendix B to 40 CFR Part 60?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Operation & Maintenance Plans Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No

283	ATTACHMENT C.VI.E.3.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee use a span value for any Hg CEMS that represents the mercury concentration corresponding to approximately two times the emissions standard rounded up to the nearest multiple of 5 μg/m3 of total mercury or higher level if necessary to include Hg concentrations which may occur (excluding concentrations during in-line raw "mill off" operation)? As specified in PS 12A, Section 6.1.1, the data recorder output range shall include the full range of expected Hg concentration values which would include those expected during "mill off" conditions. Engineering judgments made and calculations used to determine the corresponding span concentration from the emission standard shall be documented in the site-specific monitoring plan and associated records.	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Other Additional Remarks: On December 18, 2018, the EPA granted an Alternative Calibration Method for Mercury CEMS under the Portland Cement NESHAP. The alternative calibration method (ALT-132) for above-span readings is currently in use. Supporting Documents Needed: No Supporting Documents Provided:No
284	ATTACHMENT C.VI.E.3.b Requirements for Cement Plant, Kilns And Clinker Coolers In order to quality assure data measured above the span value, did the Permittee use one of the three options described in Conditions VI.E.3.b(1)-(3) of Attachment "C"? Where these options are employed while the kiln is operating in a mill-off mode, the "above span" described in Condition VI.E.3.b(3) of Attachment "C" may substitute for the daily upscale calibration provided the data normalization process in Condition VI.E.3.b(3) of Attachment "C" are not required. If data normalization is required, the normal daily upscale calibration check must be performed to quality assure the operation of the CEMS for that day. In this particular case, adjustments to CEMS normally required by Procedure 5 when a daily upscale does not meet the 5 percent criterion are not required, unless Condition VI.E.3.b(3) of Attachment "C" data normalization is necessary and a subsequent normal daily calibration check demonstrates the need for such adjustment.	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Other Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln 4 - Facility Procedures. Supporting Documents Needed: No Supporting Documents Provided:No

285	ATTACHMENT C.VI.E.3.b(4) Requirements for Cement Plant, Kilns And Clinker Coolers Was there any point where “above span” calibration is conducted during the period when measured emissions are above span and there is a failure to collect at least one valid data point in an hour due to the calibration duration during the compliance period?	Answer: NO
286	ATTACHMENT C.VI.E.3.c Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee operate and maintain each Hg CEMS or an integrated sorbent trap monitoring system according to the quality assurance requirements in Procedure 5 of Appendix F to 40 CFR Part 60? During the RATA of integrated sorbent trap monitoring systems required under Procedure 5, the Permittee may apply the appropriate exception for sorbent trap section 2 breakthrough: (1) For stack Hg concentrations >1 μg/dscm, <10% of section 1 mass; (2) For stack Hg concentrations <1 μg/dscm and >0.5 μg/dscm, <20% of section 1 mass; (3) For stack Hg concentrations <0.5 μg/dscm and >0.1 μg/dscm, <50% of section 1 mass; and (4) For stack Hg concentrations <0.1 μg/dscm, no breakthrough criterion assuming all other QA/QC specifications are met.	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
287	ATTACHMENT C.VI.E.3.c Requirements for Cement Plant, Kilns And Clinker Coolers Was relative accuracy testing of mercury monitoring systems under PS 12A, PS 12B, or Procedure 5 conducted at normal operating conditions with the raw mill on?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Performance/Source Testing Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. An Hg RATA was conducted on Kiln 4 on03/25/2026. Supporting Documents Needed: No Supporting Documents Provided:No

288	ATTACHMENT C.VI.E.3.d Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee install, calibrate, operate, and maintain instruments for continuously measuring and recording the each kiln exhaust gas flow rate to the atmosphere according to the requirements in Condition II.B.3 of Attachment "C"?	Answer: YES
288.1	ATTACHMENT C.VI.E.3.d Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee make appropriate moisture correction to the kiln exhaust gas flow rates?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
289	ATTACHMENT C.VI.E.3.e Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee operate an integrated sorbent trap monitoring system conforming to PS 12B during the compliance period?	Answer: NO
290	ATTACHMENT C.VI.E.4.a(1) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee demonstrate compliance by operating a mercury CEMS or a sorbent trap based CEMS?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
291	ATTACHMENT C.VI.E.4.a(1) Requirements for Cement Plant, Kilns And Clinker Coolers	Answer: NO

	Was the Permittee required to demonstrate initial compliance with the mercury emissions standard during the compliance period in accordance with Condition VI.E.4.a(1) of Attachment "C"?	
292	ATTACHMENT C.VI.E.4.a(2) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee use an integrating sorbent trap CEMS?	Answer: NO
293	ATTACHMENT C.VI.E.4.b(1) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee demonstrate compliance using the CEMS and monitoring methods and procedures in Condition VI.E.3 of Attachment “C”?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
294	ATTACHMENT C.VI.E.4.b(2) Requirements for Cement Plant, Kilns And Clinker Coolers If the Permittee uses an integrated sorbent trap Hg CEMS to determine ongoing compliance, did the Permittee use the procedures described in Condition VI.E.4.a(2) of Attachment “C” to assign hourly mercury concentration values and to calculate rolling 30 operating data emissions rates? Since the Permittee assigns the mercury concentration measured with the sorbent trap to each relevant hour respectively for each operating day of the integrated period, the Permittee may schedule the sorbent change periods to any time of the day (i.e., the sorbent trap replacement need not be scheduled at 12:00 midnight nor must the sorbent trap replacements occur only at integral 24-hour intervals).	Answer: Continuous Method: Other Additional Remarks: Not applicable - integrated sorbent trap monitoring systems are not used for mercury emissions monitoring at this facility. Supporting Documents Needed: No Supporting Documents Provided:No
295	ATTACHMENT C.VI.E.4.b(3) Requirements for Cement Plant,	Answer: Continuous

	Kilns And Clinker Coolers Was Mercury measured either upstream of the coal mill or in the coal mill stack?	Method: Continuous Emissions Monitoring System (CEMS) Other Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln 4 - Facility Procedures. Supporting Documents Needed: No Supporting Documents Provided:No
296	ATTACHMENT C.VI.F.2, 3 Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee not cause to be discharged into the atmosphere from any kiln any gases which contain HCl more than 3.0 ppmvd on dry basis, corrected to 7 percent oxygen? If the Permittee uses CEMS for compliance, the emission limit is based on rolling 30-day average. The Permittee may choose to install lime injection on the Kiln 4 Baghouse to assist in achieving compliance with the HCl emission limit set forth in Condition VI.F.2 of Attachment "C". The lime injection system may be used intermittently, if necessary, to achieve compliance with the HCl emission limit.	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
297	ATTACHMENT C.VI.F.4 Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee operate HCl CEMS on the kiln stacks in accordance with one of the requirements in Conditions VI.F.4.a or b of Attachment “C”?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Other Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. HCl calibration gases were not available during this compliance period; tentative availability and delivery date(s) of these gases are currently unknown. EPA approved the use of Gas Manufacturer Alternative Certified Standard (GMACS) gases in a letter to Stephen Miller of Air Liquide on February 22, 2016 - GMACS gases are currently in use for the

		required HCl monitor calibrations. Supporting Documents Needed: Yes Supporting Documents Provided: HCL - PollutantExcessEmissionsReports.pdf
298	ATTACHMENT C.VI.F.5.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee demonstrate initial and continuous compliance by operating CEMS as per Condition VI.F.3 of Attachment “C”?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Other Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln 4 - Facility Procedures. Supporting Documents Needed: No Supporting Documents Provided:No
299	ATTACHMENT C.VI.F.5.b Requirements for Cement Plant, Kilns And Clinker Coolers Was initial compliance based on the 30 kiln operating days that occur after September 9, 2016 in which the Permittee operates using a HCl CEMS? Hourly HCl concentration data shall be obtained according to Condition VI.F.3 of Attachment "C".	Answer: Continuous Method: Other Continuous Emissions Monitoring System (CEMS) Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln 4 - Facility Procedures. Supporting Documents Needed: No Supporting Documents Provided:No
300	ATTACHMENT C.VI.F.5.c Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee repeat the performance test no later than 30 months following the last performance test except where that specific pollutant is monitored using CEMS? Performance tests required every 12 months must be completed no more than 13 calendar months after the previous performance test.	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Performance/Source Testing Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. An HCl RATA was conducted on Kiln 4 on 02/20/2026.

		Supporting Documents Needed: No Supporting Documents Provided:No
301	ATTACHMENT C.VI.G.1.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the total emissions of carbon monoxide from Kilns 1, 2, 3, and Kiln 4 in-line kiln/raw mill shall not exceed 5,069 tons per year (rolling twelve-month total calculated at the end of each month)?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: Yes Supporting Documents Provided: CO - PollutantExcessEmissionsReports.pdf
302	ATTACHMENT C.VI.G.1.b Requirements for Cement Plant, Kilns And Clinker Coolers Did the total emissions of nitrogen oxides from Kilns 1, 2, 3, and Kiln 4 in-line kiln/raw mill shall not exceed 5,144 tons per year (rolling twelve-month total calculated at the end of each month)?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: Yes Supporting Documents Provided: NOX - PollutantExcessEmissionsReports.pdf
303	ATTACHMENT C.VI.G.2.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee calibrate, maintain and operate continuous emission monitoring systems to measure carbon monoxide (CO) and nitrogen oxides (NOX) mass emissions from Kilns 1,2,3, and Kiln 4 in-line kiln/raw mill? This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Operation & Maintenance Plans Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No

	startup or shutdown, or resulted from upset of operations.	Supporting Documents Provided:No
304	ATTACHMENT C.VI.G.2.b(1) Requirements for Cement Plant, Kilns And Clinker Coolers Did the continuous emission rate monitoring systems meet the following requirements? (1) 40 CFR Part 60, Appendix B, "Performance Specifications." (a) The NOX continuous emission rate monitoring systems shall meet the requirements of Performance Specification 2, Specifications and test procedures for SO2 and NOX continuous emission monitoring systems in stationary sources, in Appendix B to 40 CFR Part 60. (b) The CO continuous emission rate monitoring system shall meet the requirements of Performance Specification 4a, Specifications and test procedures for carbon monoxide continuous emission monitoring systems in stationary sources, in Appendix B to 40 CFR Part 60. (c) The NOX and CO continuous emission rate monitoring systems shall meet the requirements of Performance Specification 6, Specifications and test procedures for continuous emission rate monitoring systems in stationary sources, in Appendix B to 40 CFR Part 60.	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Performance/Source Testing Operation & Maintenance Plans Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. A CO and NOX RATA was conducted on Kiln 4 on 02/20/2026. Supporting Documents Needed: No Supporting Documents Provided:No
305	ATTACHMENT C.VI.G.2.b(2) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee continue to implement the ADEQ approved Quality Assurance/Quality Control Plan which includes procedures for dealing with data gaps based on the procedures contained in 40 CFR Part 75, Subpart D (40 CFR § 75.30)?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Other Additional Remarks: Quality Assurance / Quality Control Plan Supporting Documents Needed: No Supporting Documents Provided:No
306	ATTACHMENT C.VI.G.2.c Requirements for Cement Plant, Kilns And Clinker Coolers Were instrument span such that the expected output is 50 to 70 percent of span?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Other

		Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln 4 - Quality Assurance/Quality Control Plan. Supporting Documents Needed: No Supporting Documents Provided:No
307	ATTACHMENT C.VI.G.2.d Requirements for Cement Plant, Kilns And Clinker Coolers Was all data retained on site in electronic form and available for review by any authorized ADEQ representative?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
308	ATTACHMENT C.VI.G.2.e Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee maintain a file of all measurements, including the continuous monitoring system and performance testing data; continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices? These data shall be recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurements, maintenance, reports and records.	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
309	ATTACHMENT C.VI.G.2.f Requirements for Cement Plant, Kilns And Clinker Coolers Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, did the Permittee meet the minimum frequency of operation requirements as follows?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping

	The continuous monitoring system shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.	Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
310	ATTACHMENT C.VI.G.2.g Requirements for Cement Plant, Kilns And Clinker Coolers For continuous monitoring system measurements, were one-hour arithmetic averages computed from four or more data points equally spaced over each one-hour period? Data recorded during periods of continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this condition.	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
311	ATTACHMENT C.VI.G.2.h Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee calculate and record the total carbon monoxide and nitrogen oxides emissions from all kilns at the end of each month, for the preceding 12-month period? This record shall be retained for at least five years following the date of such measurements.	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: No Supporting Documents Provided:No
312	ATTACHMENT C.VI.G.2.i Requirements for Cement Plant, Kilns And Clinker Coolers Did either of the following excess emissions occur during the compliance period? (1) All 12-month periods for which the NOX emission rate to the atmosphere as determined in accordance with Condition VI.G.2.h of Attachment "C" exceeds the applicable emission standard in Condition VI.G.1.b of Attachment "C". (2) All 12-month periods for	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions.

	which the CO emission rate to the atmosphere as determined in accordance with Condition VI.G.2.h of Attachment "C" exceeds the emission standard in Condition VI.G.1.a of Attachment "C".	Supporting Documents Needed: No Supporting Documents Provided:No
313	ATTACHMENT C.VI.H.1 Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee not emit sulfur dioxide from kilns in an amount in excess of 6 pounds of sulfur oxides, calculated as sulfur dioxide, per ton cement kiln feed?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Supporting Documents Needed: Yes Supporting Documents Provided: Kiln SO2 Compliance.pdf
314	ATTACHMENT C.VI.H.2 Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee conduct a performance test once during the permit term in accordance with EPA Reference Method 6C of 40 CFR Part 60, Appendix A, to measure the concentration of sulfur dioxide being emitted into the atmosphere from Kilns 1, 2, 3 and 4? Testing of Kilns 1, 2 and 3 shall be conducted within 90 days of startup. The tests shall be conducted while burning the fuel or fuel mix containing the highest possible sulfur content for the year.	Answer: Continuous Method: Performance/Source Testing Additional Remarks: Kilns 1, 2, and 3 did not operate during this compliance period due to market conditions. Kiln 4 Baghouse H5-GB was tested for SO2 on August 15-16, 2022. Supporting Documents Needed: No Supporting Documents Provided:No
315	ATTACHMENT C.VI.I.2 Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee not emit or cause to be emitted from Kiln 4 NOX in excess of 3.46 pounds of NOX per ton of clinker produced, based on a rolling 30-kiln operating day basis?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

316	ATTACHMENT C.VI.I.3 Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee comply with the requirements of Condition VI.I of Attachment "C" no later than December 31, 2018?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
317	ATTACHMENT C.VI.I.4.a(1) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee maintain, calibrate, and operate a CEMS, in full compliance with the requirements found at 40 CFR 60.63(f) and (g), to accurately measure concentration by volume of NOX, diluent, and stack gas volumetric flow rate from Kiln 4 in-line kiln/raw mill stack (H5-GB)?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Other Additional Remarks: Facility Procedure. Supporting Documents Needed: No Supporting Documents Provided:No
318	ATTACHMENT C.VI.I.4.a(2) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee use CEMS to determine compliance with the emission limitation in Condition VI.I.2 of Attachment “C”, in combination with data on actual clinker production?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
319	ATTACHMENT C.VI.I.4.a(3) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee operate the monitoring system and collect data at all required intervals at all times Kiln 4 is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments)?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Other Additional Remarks: Facility Procedure Supporting Documents Needed: No Supporting Documents Provided:No
320	ATTACHMENT C.VI.I.4.b(1) Requirements for Cement Plant, Kilns And Clinker Coolers	Answer: Continuous

	Did the Permittee record the daily clinker production rates?	Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
321	ATTACHMENT C.VI.I.4.b(2)(a) Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee calculate and record the 30-kiln operating day average emission rate of NOx, in pounds per ton (lb./ton) of clinker produced, as the total of all hourly emissions data for the cement kiln in the preceding 30-kiln operating days, divided by the total tons of clinker produced in that kiln during the same 30-day operating period, using the equation provided in Condition VI.I.4.b(2)(a) of Attachment "C"?	Answer: Continuous Method: Continuous Emissions Monitoring System (CEMS) Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
322	ATTACHMENT C.VI.I.4.b(2)(b) Requirements for Cement Plant, Kilns And Clinker Coolers For each kiln operating hour for which the Permittee does not have at least one valid 15-minute CEMS data value, did the Permittee use the average emissions rate in pounds per hour (lb./hr.) from the most recent previous hour for which valid data are available?	Answer: YES
322.1	ATTACHMENT C.VI.I.4.b(2)(b) Requirements for Cement Plant, Kilns And Clinker Coolers Was hourly clinker production determined by the Permittee in accordance with the requirements found at 40 CFR 60.63(b)?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
323	ATTACHMENT C.VI.I.4.b(3) Requirements for Cement Plant, Kilns And Clinker Coolers At the end of each kiln operating day, did the Permittee calculate and record a new 30- day rolling average emission rate in lb/ton clinker from the arithmetic average of all valid hourly emission rates for the current kiln operating day and	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

	the previous 29 successive kiln operating days?	
324	ATTACHMENT C.VI.I.4.b(4) Requirements for Cement Plant, Kilns And Clinker Coolers Upon and after the completion of installation of ammonia (NH3) and/or urea injection on a unit (hereinafter referred to as NH3 injection), did the Permittee install, and thereafter maintain and operate, instrumentation to continuously monitor and record levels of NH3 injection for that unit?	Answer: Continuous Method: Parametric Monitoring Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
325	ATTACHMENT C.VI.I.5 Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee maintain the following records for at least five years? a. All CEMS data, including the date, place, and time of sampling or measurement; emissions and parameters sampled or measured; and results. b. All records of clinker production. c. Daily 30-day rolling emission rates of NOx, calculated in accordance with Condition VI.I.4.b(2) of Attachment "C". d. Records of quality assurance and quality control activities for emissions measuring systems including, but not limited to, any records specified by 40 CFR part 60, Appendix F, Procedure 1. e. Records of NH3 injection, as recorded by the instrumentation required in Condition VI.I.4.b(4) of Attachment "C". f. Records of all major maintenance activities conducted on emission units, air pollution control equipment, CEMS and clinker production measurement devices. g. Any other records specified by 40 CFR part 60, subpart F, or 40 CFR part 60, Appendix F, Procedure 1.	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
326	ATTACHMENT C.VI.I.6 Requirements for Cement Plant, Kilns And Clinker Coolers Were all reports and notifications required under Condition VI of Attachment "C" submitted by the Permittee to the Arizona Department of Environmental Quality; to the U.S.	Answer: YES

	Environmental Protection Agency, Region 9, Air Division via electronic mail to aeo_r9@epa.gov; and to the U.S. Environmental Protection Agency Enforcement Division via electronic mail to R9AirPermits@epa.gov?	
326.1	ATTACHMENT C.VI.I.6 Requirements for Cement Plant, Kilns And Clinker Coolers Were reports required under Condition VI.I.6.c through Condition VI.I.6.g of Attachment "C" submitted within 30 days after the applicable compliance date in Condition VI.I.3 of Attachment "C" and at least semiannually thereafter, within 30 days after the end of a semiannual period? The Permittee may submit reports more frequently than semiannually for the purposes of synchronizing reports required under Section VI of Attachment "C" with other reporting requirements, such as the Title V monitoring report required by 40 CFR 70.6(a)(3)(iii)(A), but at no point shall the duration of a semiannual period exceed six months.	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
326.2	ATTACHMENT C.VI.I.6.a Requirements for Cement Plant, Kilns And Clinker Coolers Prior to commencing construction of the NH3 injection system, did the Permittee submit to the EPA a report describing the design of the SNCR system? This report shall include: (1) reagent type, (2) description of the locations selected for reagent injection, (3) reagent injection rate (expressed as a molar ratio of reagent to exhaust gas), (4) equipment list, (5) equipment arrangement, and (6) a summary of kiln characteristics that were relied upon as the design basis for the SNCR system.	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
327	ATTACHMENT C.VI.I.6.b Requirements for Cement Plant, Kilns And Clinker Coolers Within 30 days following the NOX compliance date in Condition VI.I.3 of Attachment “C” did the Permittee submit to the EPA a report of any process improvement or	Answer: YES

	debugging activities that were performed on the SNCR system?	
327.1	ATTACHMENT C.VI.I.6.b Requirements for Cement Plant, Kilns And Clinker Coolers Did the report include the following? (1) a description of each process adjustment performed on the SNCR system or the kiln, (2) a discussion of whether the adjustment affected NOx emission rates, (3) a description of the range (if applicable) over which the adjustment was examined, and (4) a discussion of how the adjustment will be reflected or accounted for in kiln operating practices. (5) If CEMS data or kiln operating data were recorded during process improvement or debugging activities, the Permittee shall submit the recorded CEMS and kiln operating data with the report. (6) The data shall be submitted in an electronic format consistent with and able to be manipulated by a spreadsheet program such as Microsoft Excel.	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
328	ATTACHMENT C.VI.I.6.c Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee submit a report that lists the daily 30-day rolling emission rates for NOx?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
329	ATTACHMENT C.VI.I.6.d Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee submit excess emissions reports for NOx limits? Excess emissions means emissions that exceed the emissions limits specified in Condition VI.I.2 of Attachment "C". The reports shall include the following: (1) the magnitude, (2) date(s), and (3) duration of each period of excess emissions, (4) specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the unit, (5) the nature and cause of any	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No

	malfunction (if known), and (6) the corrective action taken or preventative measures adopted.	
330	ATTACHMENT C.VI.I.6.e Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee submit CEMS performance reports, to include dates and duration of each period during which the CEMS was inoperative (except for zero and span adjustments and calibration checks), reason(s) why the CEMS was inoperative and steps taken to prevent recurrence, and any CEMS repairs or adjustments?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
331	ATTACHMENT C.VI.I.6.f Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee also submit results of any CEMS performance tests specified by 40 CFR part 60, Appendix F, Procedure 1 (Relative Accuracy Test Audits, Relative Accuracy Audits, and Cylinder Gas Audits)?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
332	ATTACHMENT C.VI.I.6.g Requirements for Cement Plant, Kilns And Clinker Coolers When no excess emissions have occurred or the CEMS has not been inoperative, repaired, or adjusted during the reporting period, did the Permittee state such information in the reports required by Condition VI.I.6.e of Attachment "C"?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
333	ATTACHMENT C.VI.I.7.a Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee submit notification of commencement of construction of any equipment which is being constructed to comply with the NOx emission limits in Condition VI.I.2 of Attachment "C"?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
334	ATTACHMENT C.VI.I.7.b Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee submit semiannual progress reports on	Answer: Continuous Method:

	construction of any such equipment?	Reporting Supporting Documents Needed: No Supporting Documents Provided:No
335	ATTACHMENT C.VI.I.7.c Requirements for Cement Plant, Kilns And Clinker Coolers Did the Permittee submit notification of initial startup of any such equipment?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
336	ATTACHMENT C.VI.I.8.a Requirements for Cement Plant, Kilns And Clinker Coolers At all times, including periods of startup, shutdown, and malfunction, did the Permittee, to the extent practicable, maintain and operate the unit including associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions? Pollution control equipment shall be designed and capable of operating properly to minimize emissions during all expected operating conditions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Regional Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the unit.	Answer: Continuous Method: Operation & Maintenance Plans Supporting Documents Needed: No Supporting Documents Provided:No
337	ATTACHMENT C.VI.I.8.b Requirements for Cement Plant, Kilns And Clinker Coolers After completion of installation of NH3 injection on a unit, did the Permittee inject sufficient NH3 to achieve compliance with NOx emission limits set forth in Condition VI.I.2 of Attachment "C" while preventing excessive NH3 emissions?	Answer: Continuous Method: Other Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No

338	ATTACHMENT C.VII.B.1.a, b Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee not cause, allow or permit the discharge of particulate matter from any identifiable process source within any existing cement plant that commenced construction on or before August 17, 1971, to exceed the amounts calculated by one of the following equations? a. For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation: E = 4.10 * P^0.67 where: E = the maximum allowable particulate emissions rate in pounds-mass per hour. P = the process weight rate in tons-mass per hour. b. For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation: E =55.0 * P^0.11 - 40 where "E" and "P" are defined as indicated in Condition VII.B.1.a(1) of Attachment "C".	Answer: Continuous Method: Other Additional Remarks: Work Practices, Emission Calculations Supporting Documents Needed: No Supporting Documents Provided:No
339	ATTACHMENT C.VII.B.1.c Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee not cause or allow to be emitted into atmosphere from any dust collector gases which contain PM and PM10 emissions in excess of the rates in Condition VII.B.1.c of Attachment "C"?	Answer: Continuous Method: Operation & Maintenance Plans Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
340	ATTACHMENT C.VII.B.1.d Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee not cause or allow emissions which contain PM10 in excess of 0.005 gr/dscf from dust collector D2-1-DC1 for D2 Finish Mill, D2-1-M?	Answer: Continuous Method: Performance/Source Testing Operation & Maintenance Plans Supporting Documents Needed: No Supporting Documents Provided:No

341	ATTACHMENT C.VII.B.1.e Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee not cause or allow emissions which contain PM10 in excess of 0.005 gr/dscf from the following dust collectors? C2-DC2, C2-DC3, C2-DC4, C2-DC5, C2-DC6, C2-DC7, C2-DC8, C2-DC9, C2-DC10, C2-DC11, C2-DC12, C2-DC13, D2-DC1, D2-DC3, D2-DC4, D2-DC5, D2-DC6,D2-DC7, F2-DC1, F2-DC4, D4-DC1, D4-DC2, AC-DC1, CM-DC17	Answer: Continuous Method: Performance/Source Testing Operation & Maintenance Plans Supporting Documents Needed: No Supporting Documents Provided:No
342	ATTACHMENT C.VII.B.2.a Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee not cause to be discharged from any raw material, clinker, or finished product storage bin, conveying system transfer point, bagging system, raw material dryer, raw & finish mills, and bulk loading or unloading system any gases which exhibit opacity in excess of 10 percent?	Answer: Continuous Method: Operation & Maintenance Plans Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
343	ATTACHMENT C.VII.B.2.b Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee not discharge into the atmosphere from any affected facility constructed after August 17, 1971, any gases which exhibit 10 percent opacity, or greater?	Answer: Continuous Method: Operation & Maintenance Plans Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
344	ATTACHMENT C.VII.B.2.c Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee not cause or allow visible emissions from the D4 Raw Mill Additive Feed Hopper, D4-HOP in excess of 10 percent opacity?	Answer: Continuous Method: Operation & Maintenance Plans Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No

345	ATTACHMENT C.VII.B.2.d Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee not cause or allow visible emissions from the D4 Raw Mill Rejects Bin, D4-SB1 in excess of 20 percent opacity?	Answer: Continuous Method: Operation & Maintenance Plans Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
346	ATTACHMENT C.VII.B.3.a Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) At all times including periods of startup, shutdown, and malfunction, did the Permittee, to the extent practicable, maintain and operate all affected sources and the following dust collectors in a manner consistent with good air pollution control practice for minimizing particulate matter emissions? This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations. AC1-DC1, AC2-DC1, AC3-DC1, AC4-DC1, CM1-DC1, CM2-DC1, CM3-DC1, CM4-DC1, CM5-DC1, CM6-DC1, CM7-DC1, CM7-DC2, CM7-DC3, D2-1-DC1, D3-1-DC1, D3-1-DC2, D3-1-DC3, BL-DC1, BL-DC2, BL-DC3, BL-DC4, BL-DC5, BL-DC6, BL-DC7, BL-SB5-DC1, BL-SB5-DC2, BL-SB5-DC3, C2-DC2, C2-DC3, C2-DC4, C2-DC5, C2-DC6, C2-DC7, C2-DC8, C2-DC9, C2-DC10, C2-DC11, C2-DC12, C2-DC13, CM-MA-DC1, AC-DC1, AC-DC3, CM-DC4, CM-DC5, CM-DC8, CM-DC9, CM-DC10, CM-DC11, CM-DC12, CM-DC14, CM-DC15, CM-DC16, CM-DC17, D2-DC1, D2-DC3, D2-DC4, D2-DC5, D2-DC6, D2-DC7, D4-DC1, D4-DC2, F2-PS-DC1, F2-PS-DC2, F2-PS-DC3, F3-KS-DC1, F2-DC1, F2-DC4, F2-SB2-DC, F3-DC1, F3-DC2, H4-K1-DC, H4-K2-DC, H4-K3-DC, H2-KB1-DC, H2-KB3-DC, H2-DC1, H2-DC2, H2-DC3, H4-DC1, H5-DC1, H5-5-DC2, PH-DC1, PH-DC2, PH-DC3, PH-DC4, PH-DC5, AC-BE2-DC, D2-PC	Answer: Continuous Method: Operation & Maintenance Plans Supporting Documents Needed: No Supporting Documents Provided:No

347	ATTACHMENT C.VII.B.3.b(1) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) When the D4 Raw Mill Additive Feed Hopper is in use, did the Permittee use water sprays as needed to comply with the emission limits in Condition VII.B.2.c of Attachment "C"?	Answer: Continuous Method: Other Operation & Maintenance Plans Additional Remarks: Facility Procedures, Work Practices. Supporting Documents Needed: No Supporting Documents Provided:No
348	ATTACHMENT C.VII.B.3.b(2) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee inspect the water spray system annually to ensure proper operation?	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
349	ATTACHMENT C.VII.B.3.c(1) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Was the D4 Raw Mill Rejects Bin in an enclosed bin which is controlled through the raw mill system?	Answer: Continuous Method: Other Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
350	ATTACHMENT C.VII.B.3.c(2) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee inspect the bin enclosure and associated control systems for leaks and malfunctions during planned, periodic maintenance?	Answer: Continuous Method: Other Operation & Maintenance Plans Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No

351	ATTACHMENT C.VII.B.3.d Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) During the periods when the clinker is transferred to trucks from the Clinker Bypass Bin H2-SB1, did the Permittee take all measures, including minimizing the gap between the chute and the truck, to minimize fugitive emissions?	Answer: Continuous Method: Other Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
352	ATTACHMENT C.VII.B.4.a Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) The next section is applicable to opacity Monitoring for raw material, clinker, or finished product storage bin, conveying system transfer point, bagging system, raw material dryer and bulk loading or unloading system except H2-DC3 for Clinker Bypass Bin H2-SB1. Click "Yes" to continue.	Answer: YES
352.1	ATTACHMENT C.VII.B.4.a Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee conduct visible emissions tests of any affected source in accordance with Method 22 of Appendix A–7 to 40 CFR 60? The performance tests must be conducted while the affected source is in operation.	Answer: YES
352.1.1	ATTACHMENT C.VII.B.4.a(1) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22 of Appendix A–7 to 40 CFR 60 for all sources that were not tested semiannually or annually? The performance test must be conducted while the affected source is in operation.	Answer: Continuous Method: Recordkeeping Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
352.1.2	ATTACHMENT C.VII.B.4.a(2),(3) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Were any of the required visible emissions tests associated	Answer: YES

	with Condition VII.B.4.a of Attachment "C" conducted semiannually or annually?	
352.1.2.1	ATTACHMENT C.VII.B.4.a(2) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) For all sources that were tested semiannually, were no visible emissions observed for the previous 6 monthly visible emissions surveys that were conducted?	Answer: Continuous Method: Recordkeeping Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
352.1.2.2	ATTACHMENT C.VII.B.4.a(3) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) For all sources that were tested annually, were no visible emissions observed for the previous semiannual visible emissions survey that was conducted?	Answer: Continuous Method: Recordkeeping Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
352.1.2.3	ATTACHMENT C.VII.B.4.a(2)-(4) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) For all sources that were tested annually, were no visible emissions observed for the previous semiannual visible emissions survey that was conducted?	Answer: Continuous Method: Recordkeeping Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
352.2	ATTACHMENT C.VII.B.4.a(5) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) The requirements to conduct Method 22 visible emissions monitoring do not apply to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. Were the enclosures for these transfer points	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

	operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan?	
352.3	ATTACHMENT C.VII.B.4.a(6) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) If any partially enclosed or unenclosed conveying system transfer point is located in a building, did the Permittee conduct a Method 22 performance test according to the requirements of VII.B.4.a(1) through (4) of Attachment "C" for each such conveying system transfer point located within the building, or for the building itself, according to Condition VII.B.4.a(7) of Attachment "C"?	Answer: Continuous Method: Recordkeeping Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
352.4	ATTACHMENT C.VII.B.4.a(7) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) If visible emissions from a building are monitored, were the requirements of conditions VII.B.4.a(1) through (4) of Attachment "C" applied to the monitoring of the building, and, did the Permittee also test visible emissions from each side, roof, and vent of the building for at least 10 minutes?	Answer: Continuous Method: Recordkeeping Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
352.5	ATTACHMENT C.VII.B.4.a(7) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) If visible emissions are observed, was an investigation of the dust collector initiated within 24 hours to determine if there is a need for corrective action?	Answer: YES
352.5.1	ATTACHMENT C.VII.B.4.a(7) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) If corrective action is required, was it implemented as soon as practicable in order to advert or minimize any possible exceedances of the emission limit?	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

352.6	ATTACHMENT C.VII.B.4.a Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Was the clinker bypass bin in operation during the compliance period?	Answer: YES
352.6.1	ATTACHMENT C.VII.B.4.b(1) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) During the periods when the clinker bypass bin, H2-SB1 is in operation and loading clinker to trucks or to ground, did the Permittee conduct a 10-minute visible emissions test of each affected sources in accordance with Method 22 of Appendix A–7 to 40 CFR 60?	Answer: Continuous Method: Recordkeeping Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
352.6.2	ATTACHMENT C.VII.B.4.b(2) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) If visible emissions are observed during any Method 22 test, did the Permittee conduct 30 minutes of opacity observations, recorded at 15-second interval in accordance with Method 9 of Appendix A–4 to 40 CFR 60? The Method 9 performance test shall begin within 1 hour of any observation of visible emissions.	Answer: Continuous Method: Recordkeeping Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
352.6.3	ATTACHMENT C.VII.B.4.b(3) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) If the opacity observation exceeds 10%, did the Permittee report it as an excess emission in accordance with Section XI of Attachment “A”?	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
352.7	ATTACHMENT C.VII.B.4.c(1) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee conduct a monthly 1-minute visible emission test of each dust collector listed in Condition VII.B.1.e of Attachment “C” in accordance with EPA Reference Method 22 of Appendix A to 40 CFR Part 60?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Method 22 Opacity Observations Supporting Documents Needed: No

		Supporting Documents Provided:No
352.8	ATTACHMENT C.VII.B.4.c(2) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) "If visible emissions are observed, was an investigation of the dust collector initiated within 24 hours to determine if there is a need for corrective action? If corrective action is required, was it implemented as soon as practicable in order to advert or minimize any possible exceedances of the emission limit?"	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
352.9	ATTACHMENT C.VII.B.4.c(3), (4) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Were any of the required visible emissions tests associated with Condition VII.B.4.a of Attachment "C" conducted semiannually or annually?	Answer: YES
352.9.1	ATTACHMENT C.VII.B.4.c(3) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) For all sources that were tested semiannually, were no visible emissions observed for the previous 6 monthly visible emissions surveys that were conducted?	Answer: Continuous Method: Recordkeeping Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
352.9.2	ATTACHMENT C.VII.B.4.c(4) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) For all sources that were tested annually, were no visible emissions observed for the previous semiannual visible emissions survey that was conducted?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Method 22 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
352.9.3	ATTACHMENT C.VII.B.4.c(3)-(5) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers)	Answer: NO

	Were visible emissions observed during any semiannual or annual visible emissions tests?	
353	ATTACHMENT C.VII.B.4.d(1) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee monitor opacity by conducting daily visual emissions observations of the mill sweep and air separator particulate matter control devices (PMCD) of the raw or finish mills in accordance with the procedures of Method 22 of Appendix A–7 to 40 CFR 60? The duration of the Method 22 performance test shall be 6 minutes.	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Method 22 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
354	ATTACHMENT C.VII.B.4.d(2) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Within 24 hours of the end of the Method 22 performance test in which visible emissions were observed, did the Permittee conduct a follow up Method 22 performance test of each stack from which visible emissions were observed during the previous Method 22 performance test?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Method 22 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
355	ATTACHMENT C.VII.B.4.d(3) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) If visible emissions are observed during the follow-up Method 22 performance test from any stack from which visible emissions were observed during the previous Method 22 performance test, did the Permittee conduct an opacity test of each stack from which emissions were observed during the follow up Method 22 performance test in accordance with Method 9 of Appendix A–4 to part 60 of this chapter? The duration of the Method 9 test shall be 30 minutes.	Answer: Continuous Method: Recordkeeping Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
356	ATTACHMENT C.VII.B.4.e Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) If visible emissions were observed during any Method 22	Answer: Continuous Method: Other

	visible emissions test conducted under Conditions VII.B.4.a through VII.B.4.d of Attachment "C", did the Permittee initiate, within one-hour, the corrective actions specified in the operation and maintenance plan in Condition II.A.2 of Attachment "C"?	Recordkeeping Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
357	ATTACHMENT C.VII.B.4.f(1) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) As an alternative to the requirements in Condition VII.B.4.d of Attachment "C", the raw mill or finish mill may be equipped with a continuous opacity monitoring system (COMS) or bag leak detection system (BLDS). If the Permittee chooses to install a COMS in lieu of conducting the daily visual emissions testing, did the Permittee install, calibrate, maintain, and continuously operate the COMS at the outlet of the PM control device of the raw mill or finish mill in accordance with the requirements in subpart A of 40 CFR Part 63 and PS–1 of Appendix B to 40 CFR Part 60?	Answer: Continuous Method: Continuous Opacity Monitoring System (COMS) Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
358	ATTACHMENT C.VII.B.4.f(2) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) If the Permittee choose to install a BLDS in lieu of conducting the daily visual emissions testing, did the Permittee install, calibrate, maintain, and continuously operate a bag leak detection system in accordance with the requirements in 40 CFR 63.1350(m)(10) and (11)?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
359	ATTACHMENT C.VII.B.4.g(1) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee install, calibrate, maintain, and operate a Bag Leak Detection System for detecting leaks in dust collector D2-1-DC1? This condition is not material, as defined in Arizona Administrative Code R18-2-331 and Arizona Revised Statutes section 49-464(G), in the event	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Facility Procedures, Work Practices

	failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.	Supporting Documents Needed: No Supporting Documents Provided:No
360	ATTACHMENT C.VII.B.4.g(2)(a) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Was the Bag Leak Detection System certified by the manufacturer to be capable of detecting PM emissions at concentrations of 0.0044 grains per actual cubic foot or less? “Certify” shall mean that the instrument manufacturer has tested the instrument on gas streams having a range of particle size distributions and confirmed by means of valid filterable PM tests that the minimum detectable concentration limit is 0.0044 grains per actual cubic foot or less.	Answer: Continuous Method: Other Additional Remarks: Manufacturer's Certification Supporting Documents Needed: No Supporting Documents Provided:No
361	ATTACHMENT C.VII.B.4.g(2)(b) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the sensor on the Bag Leak Detection System provide output of relative PM emissions?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
362	ATTACHMENT C.VII.B.4.g(2)(c), (d) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Bag Leak Detection System have an alarm that will activate automatically when it detects a significant increase in relative PM emissions greater than a preset level? The presence of an alarm condition should be clearly apparent to facility operating personnel.	Answer: Continuous Method: Other Additional Remarks: System Design Supporting Documents Needed: No Supporting Documents Provided:No
363	ATTACHMENT C.VII.B.4.g(2)(e) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) For a positive-pressure fabric filter, did each compartment or cell have a bag leak detector or for a negative-pressure or	Answer: Continuous Method: Other Additional Remarks: System Design

	induced-air fabric filter, was the bag leak detector installed downstream of the fabric filter? If multiple bag leak detectors are required (for either type of fabric filter), detectors may share the system instrumentation and alarm.	Supporting Documents Needed: No Supporting Documents Provided:No
364	ATTACHMENT C.VII.B.4.g(2)(f) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Was the Bag Leak Detection System installed, operated, adjusted, and maintained so that it is based on the manufacturer's written specifications and recommendations?	Answer: Continuous Method: Other Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
365	ATTACHMENT C.VII.B.4.g(2)(g) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Was the baseline output of the Bag Leak Detection System established as follows? (i) Adjust the range and the averaging period of the device; and (ii) Establish the alarm set points and the alarm delay time.	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
366	ATTACHMENT C.VII.B.4.g(2)(h) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) After initial adjustment, were the range, averaging period, alarm set points, or alarm delay time not adjusted except as specified in the operations and maintenance plan? In no event may the range be increased by more than 100 percent or decreased by more than 50 percent over a 1-calendar year period unless the Permittee certifies in writing to the Director that the Dust Collector has been inspected and found to be in good operating condition.	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
367	ATTACHMENT C.VII.B.4.g(2)(i) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee maintain and operate the fabric filter such	Answer: Continuous Method: Operation & Maintenance Plans

	that the bag leak detector alarm is not activated and alarm condition does not exist for more than 5 percent of the total operating time in a 6-month block period? Each time the alarm activates, alarm time will be counted as the actual amount of time taken by the owner or operator to initiate corrective actions. If inspection of the fabric filter demonstrates that no corrective actions are necessary, no alarm time will be counted.	Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
368	ATTACHMENT C.VII.B.4.g(2)(i) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee continuously record the output from the Bag Leak Detection System during periods of normal operation? Normal operation does not include periods when the Bag Leak Detection System is being maintained or during startup, shutdown or malfunction.	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
369	ATTACHMENT C.VII.B.4.h(2)(a) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) The following dust collectors shall be subject to CAM requirements: F2-DC1, F2-DC4, AC-DC1, AC-BE2-DC, F2-PS-DC3, H4-K1-DC, H4-K2-DC, H4-K3-DC, H2-DC2, C2-DC4, C2-DC11, C2-DC12, D2-DC1, D2-DC3, D2-DC4, D2-1-DC1, BL-DC1, BL-DC2, BL-DC3, BL-DC4 and BL-DC6. Click "Yes" to continue if the baghouses operated during the compliance period.	Answer: YES
369.1	ATTACHMENT C.VII.B.4.h Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Were visible emissions from each baghouse listed in Condition VII.B.4.h of Attachment "C" monitored once daily using EPA Reference Method 22?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Method 22 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No

369.2	ATTACHMENT C.VII.B.4.h(2)(b) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) For the baghouses listed in Condition VII.B.4.h of Attachment "C" were the bags, seals, and baghouse compartments for these dust collectors inspected annually for each baghouse?	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
369.3	ATTACHMENT C.VII.B.4.h(5) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), did the Permittee conduct all monitoring in continuous operation (or collect data at all required intervals) at all times that the emission points are operating? Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable.	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
369.4	ATTACHMENT C.VII.B.4.h(5) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee use all the data collected during all other periods in assessing the operation of the control device and associated control system? A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.	Answer: Continuous Method: Other Operation & Maintenance Plans Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
369.5	ATTACHMENT C.VII.B.4.h(6)(a) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Upon detecting an excursion or exceedance, did the	Answer: Continuous Method: Other

	Permittee restore operation of the emission point (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions?	Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
369.6	ATTACHMENT C.VII.B.4.h(6)(a), (b) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the response include minimizing the period of any startup, shutdown, or malfunction, and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions)? Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action, or any necessary follow-up actions to return operations to within the indicator range, designated condition, or below applicable emission limitation or standard, as applicable. Determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation, and maintenance procedures and records, and inspection of the control device, associated capture system, and process.	Answer: Continuous Method: Operation & Maintenance Plans Other Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
369.7	ATTACHMENT C.VII.B.4.h(6)(c) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) After approval of monitoring under this part, if the Permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, did the Permittee promptly notify the Department, and if necessary, submit a	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No

	proposed modification to this permit to address the necessary monitoring changes? Such a modification may include, but is not limited to, re-establishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.	
369.8	ATTACHMENT C.VII.B.4.h(6)(d) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Were excursions reported as required by Condition VII.B.4 of Attachment “A” of this permit? The report shall include, at a minimum, the following: (i) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursion or exceedances, as applicable, and the corrective actions taken; and (ii) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitoring downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable).	Answer: Continuous Method: Reporting Supporting Documents Needed: No Supporting Documents Provided:No
370	ATTACHMENT C.VII.B.5.a Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) To demonstrate compliance with the emission standards in Condition VII.B.1.c, d and e of Attachment “C”, did the Permittee conduct performance test on dust collectors in identified in Condition VII.B.1.c, d and e of Attachment “C” in accordance with EPA Reference Method 5 of 40 CFR 60, Appendix A once in the permit term?	Answer: Continuous Method: Performance/Source Testing Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
371	ATTACHMENT C.VII.B.5.b(1) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Was the Permittee required to complete an initial performance test to demonstrate compliance with the opacity emissions standards in Condition VII.B.2.a of Attachment "C" during the compliance period?	Answer: NO

372	ATTACHMENT C.VII.B.5.b(2) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee demonstrate continuous compliance with the opacity standards in Condition VII.B.2.a of Attachment "C" by complying with the monitoring requirements in Condition VII.B.4.a of Attachment "C"?	Answer: Continuous Method: Other Recordkeeping Method 9 Opacity Observations Additional Remarks: Method 22 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
373	ATTACHMENT C.VII.B.5.b(3) Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee perform annual performance tests on Raw Mill Feed Hopper, D4-HOP, and Raw Mill Reject Bin, D4-SB1 in accordance with Method 9 of 40 CFR 60 Appendix A to demonstrate compliance with the opacity standards in Conditions VII.B.2.c and VII.B.2.d of Attachment "C"?	Answer: Continuous Method: Performance/Source Testing Recordkeeping Method 9 Opacity Observations Supporting Documents Needed: No Supporting Documents Provided:No
374	ATTACHMENT C.VII.B.6 Requirements for Cement Plant, Other Facilities (Except Kilns And Clinker Coolers) Did the Permittee keep records of rolling 12-month total of limestone added in the D3 mill and of periods of operations of Clinker Bypass Bin, H2-SB1?	Answer: Continuous Method: Other Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No
375	ATTACHMENT C.VIII.A.1, 2 Requirements for Cement Plant, Secondary Materials Utilization Procedures Did the Permittee only burn the fuels listed in Condition VIII.A.1 of Attachment "C" in Kilns 1, 2, 3, and Kiln 4 in-line kiln/raw mill?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Facility Procedures, Work Practices Supporting Documents Needed: No Supporting Documents Provided:No

376	ATTACHMENT C.VIII.A.3 Requirements for Cement Plant, Secondary Materials Utilization Procedures Did the Permittee conduct short-term performance testing to evaluate emissions from fuel with percentages greater than those allowed in Condition VIII.A.1. of Attachment "C" during the compliance period?	Answer: NO
377	ATTACHMENT C.VIII.A.4 Requirements for Cement Plant, Secondary Materials Utilization Procedures Did the Permittee propose to use a fuel that is not listed in VIII.A.1 of Attachment "C" or to use a fuel percentage that is greater than listed in VIII.A.1 of Attachment "C" during this compliance period?	Answer: NO
378	ATTACHMENT C.VIII.A.5.a Requirements for Cement Plant, Secondary Materials Utilization Procedures Were all records of analyses provided by the fuel supplier concerning the higher heating value, sulfur content and hazardous air pollutants (HAPs) in the fuel maintained on-site and available for review by the Department?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
379	ATTACHMENT C.VIII.A.5.b Requirements for Cement Plant, Secondary Materials Utilization Procedures Was the Permittee required to test for higher heating value, sulfur content and HAPs in Accordance with VIII.A.5.b of Attachment "C"?	Answer: NO
380	ATTACHMENT C.VIII.B.1 Requirements for Cement Plant, Secondary Materials Utilization Procedures Did the Permittee propose to use secondary materials during this compliance period? “Secondary materials” are materials generated by a party other than the Permittee that are to be reprocessed or reused and which are rich in oxides of calcium, alumina, iron or silica. This definition does not include earthen ores mined exclusively for their oxide content where no extraction or beneficiation other than	Answer: NO

	mining, crushing, screening, physical separation, or washing with water have occurred.	
381	ATTACHMENT C.IX Requirements for Cement Plant, Alternate Raw Material Screening Assessment For Dioxins, Furans And Precursors This section outlines a screening assessment designed to ensure that new alternate raw materials CalPortland Company considers for use at its Rillito cement plant do not contribute to dioxin and furan (D/F) emissions that might exceed the emission standard as identified in 40 CFR §63.1343(b). In effect, the screening assessment provides a means to assist in determining whether a new alternate raw material might be a change in operations that may adversely affect compliance with the applicable emission standard. Click "Yes" to continue if the Permittee proposed to use new alternate raw materials during the compliance period.	Answer: NO
382	ATTACHMENT C.X.B.1 Requirements for Cement Plant, Unclassified Systems Did the Permittee not cause, allow, or permit the discharge of particulate matter into the atmosphere in any one hour in total quantities in excess of the amounts calculated by one of the following equations: (1) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation: E= 3.59 * P^0.62 Where: E = the maximum allowable particulate emissions rate in pounds-mass per hour; and P= the process weight rate in tons-mass per hour. (2) For process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation: E= 17.31 * P^0.16 Where “E” and “P” are defined as indicated in Condition X.B.1.a(1) of Attachment “C”. For purposes of Condition X.B.1.a of Attachment “C”, the total process weight from all similar units employing a	Answer: Continuous Method: Other Additional Remarks: Work Practices, Emission Calculations Supporting Documents Needed: No Supporting Documents Provided:No

	similar type process shall be used in determining the maximum allowable emission of particulate matter.	
383	ATTACHMENT C.X.B.2 Requirements for Cement Plant, Unclassified Systems Was the opacity of any plume or effluent from any existing, stationary, point source not be greater than 20%? If the presence of uncombined water is the only reason for an exceedance of the visible emissions requirement in Condition X.B.2.a of Attachment "C", the exceedance shall not constitute a violation of the applicable opacity limit.	Answer: Continuous Method: Recordkeeping Method 9 Opacity Observations Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
384	ATTACHMENT C.X.C Requirements for Cement Plant, Unclassified Systems At all times, including periods of startup, shutdown, and malfunction, did the Permittee, to the extent practicable, operate the following bin vent filters to minimize particulate matter emissions and comply with the applicable emission limitations and standards of Condition X.B of Attachment "C"?	Answer: Continuous Method: Operation & Maintenance Plans Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No
385	ATTACHMENT C.X.D Requirements for Cement Plant, Unclassified Systems Did a certified Method 9 observer conduct the periodic opacity monitoring method specified in Condition I.A of Attachment "C" on a monthly basis from the emission units subject to Section X, when in operation?	Answer: Continuous Method: Recordkeeping Visible Emission Surveys Supporting Documents Needed: No Supporting Documents Provided:No
386	ATTACHMENT C.XI.B Requirements for Cement Plant, Regional Haze Requirements At all times, did the Permittee operate and maintain the Iron Stockpile three-sided windbreak in a manner consistent with safety and good air pollution control practices for minimizing emissions?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Work Practices Supporting Documents Needed: No

		Supporting Documents Provided:No
387	ATTACHMENT C.XI.C.1 Requirements for Cement Plant, Regional Haze Requirements Did the Permittee perform monthly inspections of the Iron Stockpile three-sided windbreak required by Condition XI.B of Attachment "C" to ensure it is in proper working condition?	Answer: Continuous Method: Other Recordkeeping Additional Remarks: Work practices, emission calculations Supporting Documents Needed: No Supporting Documents Provided:No
388	ATTACHMENT C.XI.C.2 Requirements for Cement Plant, Regional Haze Requirements Did the Permittee keep a record of the date of the inspection, the name of the inspector, and the results of the inspection? If corrective action was necessary, did the Permittee record a description of the corrective action?	Answer: Continuous Method: Recordkeeping Supporting Documents Needed: No Supporting Documents Provided:No

Additional Comments:

Do you have any additional files to upload?:No

CERTIFICATION OF SUBMISSION

CATALINA ELIAS

You validated your identity by answering your personal security question and password on myDEQ at **10:43 AM** on **05/15/2026**. At this time, you certified the summary information above by checking that you agreed to the following statement:

Certify your submission:

By checking this box I certify under penalty of law that this submittal was prepared by me, or under my direction or supervision of personnel appropriately qualified to properly gather and evaluate the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I understand that all information submitted to ADEQ is public record unless otherwise identified by law as confidential. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

APPENDIX F. CAM APPLICABILITY EMISSIONS

CALPORTLAND COMPANY – RILLITO CEMENT PLANT

Table F-1 Particulate Matter Emission Factors

Process Code	Process Description	Particulate Matter Emission Factors				Process Rate Units	Particulate Matter Emission Factor Inputs b					Reference
		PM	PM10	PM2.5	Units		k (PM)	k (PM10)	k (PM2.5)	U (mph)	M (%)	
LCrush	Primary Limestone Crushing	0.0054	0.0024	0.00020	lb/ton	tons	1	1	0.083			AP-42, Section 11.19.2, Table 11.19.2-2 (08/04)
LScreen	Primary Limestone Screening	0.025	0.0087	0.00020	lb/ton	tons	1	1	0.023			AP-42, Section 11.19.2, Table 11.19.2-2 (08/04)
LTrStnU	Limestone Transfer (Unprotected)	0.0396	0.0187	0.00284	lb/ton	tons	0.74	0.35	0.053	7.3	0.38	AP-42, Section 13.2.4, Expression 1 (11/06)
LTrStnP	Limestone Transfer (Protected)	0.0042	0.0020	0.00030	lb/ton	tons	0.74	0.35	0.053	1.3	0.38	AP-42, Section 13.2.4, Expression 1 (11/06)
AggTrnsfr	Material Transfer of Aggregate (Protected)	0.00049	0.00023	0.000035	lb/ton	tons	0.74	0.35	0.053	1.3	1.77	AP-42, Section 13.2.4, Expression 1 (11/06)
RMill	Raw Mill [a]	2.4	1.1	0.20	lb/ton	tons	1	0.45	0.083			AP-42, Section 11.6, Table 11.6-4 (01/95)
RMillSep	Raw Mill Air Separator a,c / Cyclone	0.67	0.65	0.29	lb/ton	tons	1	0.45	0.083			AP-42, Section 11.6, Table 11.6-4 (01/95)
DryKiln	Dry Process Kiln with Fabric Filter	0.20	0.17	0.0141	lb/ton	tons	1	1	0.083			AP-42, Section 11.6, Table 11.6-2 (01/95)
PreCalKiln	Preheater / Precalciner Kiln with Fabric Filter	0.21	0.09	0.0175	lb/ton	tons	1	0.45	0.083			AP-42, Section 11.6, Table 11.6-2 (01/95)
ClinkerCool	Clinker Cooler with Fabric Filter	0.13	0.06	0.0108	lb/ton	tons	1	0.45	0.083			AP-42, Section 11.6, Table 11.6-2 (01/95)
FMill	Finish Mill [a]	1.6	0.6	0.6	lb/ton	tons	1	0.38	0.38			AP-42, Section 11.6, Table 11.6-4 (01/95); Particle Size fractions from AP-42, Section 11.19.2, Table 11.19.2-2 for fines crushing (uncontrolled)
FMillSep	Finish Mill Air Separator [a]	5.6	2.1	2.1	lb/ton	tons	1	0.38	0.38			AP-42, Section 11.6, Table 11.6-4 (01/95); Particle Size fractions from AP-42, Section 11.19.2, Table 11.19.2-2 for fines crushing (uncontrolled)
CTrStn	Cement Transfer	0.73	0.47	0.47	lb/ton	tons	1	1	1			AP-42, Section 11.12, Table 11.12-2 (06/06)
CoalTrStn	Coal Transfer	0.17	0.02	0.003	lb/ton	tons	1	1	0.019		5	AP-42, Section 11.9, Table 11.9-1 (07/98)

a Emission factors that included fabric filter control were converted to uncontrolled emission factors by dividing the emission factor by (1-EF), where EF = 0.995 for PM (99.5% control). b k = particle size multiplier, U = mean wind speed, M = material moisture content.

c Raw Mill Separator converted to Raw Mill Separator with fines collection cyclone by multiplying by (1-EF), where EF = 0.895 for PM, EF = 0.775 for PM10, and EF = 0.45 for PM2.5.

Table F-2 Potential Pre-Control Device Emissions for CAM Analysis

Emission Source		Year Equipment Installed	Process Code	Annual Maximum Capacity / Process Rate	Units	Applicable Emission Limitations and Standards					Control Device	Approximate Dust Collector Flow Rate (dscfm)	Pre-Control Emission Factors				Pre-Control Emissions (ton/year)			Process Rate Information
						State Regulations or NSPS/NESHAP Regulations Proposed on or Before 11/15/1990		NSPS/NESHAP Regulations Proposed After 11/15/1990		Exempt from CAM?										
ID	Description					Emission Limitation/ Standard	Citation	Emission Limitation/ Standard	Citation				PM	PM_{10}	$PM_{2.5}$	Units	PM	PM_{10}	$PM_{2.5}$	
I. Quarry Crusher System																				
I.1	Vibrating Grizzly B2-VG1 to Belt Feeder B2-BF1	Before August 1971	LTrStnU	2,700,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B2-DC1	18,922	0.0396	0.0187	0.0028	lb/ton	53.47	25.29	3.83	Assume all process materials from the quarry plus recycle/recrush from Primary Screen (B3-VS1) are moved through this transfer point. Throughput value provided by CP on 3/31/2015.
I.2	Impact Crusher B2-IC1 to Belt Feeder B2-BF1	Before August 1971	LTrStnU	3,240,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B2-DC1	18,922	0.0396	0.0187	0.0028	lb/ton	64.17	30.35	4.60	Assume all process materials from the quarry plus recycle/recrush from Primary Screen (B3-VS1) are moved through this transfer point. Throughput value provided by CP on 3/31/2015.
I.4	Belt Feeder B2-BF1 to Belt Conveyor B2-BC1	Before August 1971	LTrStnU	3,240,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B2-DC1	18,922	0.0396	0.0187	0.0028	lb/ton	64.17	30.35	4.60	Assume all process materials from the quarry plus recycle/recrush from Primary Screen (B3-VS1) are moved through this transfer point. Throughput value provided by CP on 3/31/2015.
I.5	Belt Conveyor B2-BC1 to Vibrating Screen B3-VS1	Before August 1971	LScreen	3,240,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B3-DC1	12,434	0.0250	0.0087	0.0002	lb/ton	40.50	14.09	0.32	Assume all process materials from the quarry plus recycle/recrush from Primary Screen (B3-VS1) are moved through this transfer point. Throughput value provided by CP on 3/31/2015.
I.6	Vibrating Screen B3-VS1	2003	LScreen	3,240,000	tons	--	--	PM ≤ 0.05 g/dscm Opacity ≤ 7%	NSPS Subpart OOO	Yes	Dust Collector B3-DC1	12,434	0.0250	0.0087	0.0002	lb/ton	40.50	14.09	0.32	Exempt from CAM.
I.7	Vibrating Screen B3-VS1 to Belt Conveyor B3-BC1	Before August 1971	LTrStnU	540,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B3-DC1	12,434	0.0396	0.0187	0.0028	lb/ton	10.69	5.06	0.77	Assume 20% of raw materials from quarry are recycled from Primary Screen (B3-VS1) back to the impact crusher.
I.8	Belt Conveyor B3-BC1 to Belt Conveyor B3-BC2	Before August 1971	LTrStnU	540,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B3-DC1	12,434	0.0396	0.0187	0.0028	lb/ton	10.69	5.06	0.77	Assume 20% of raw materials from quarry are recycled from Primary Screen (B3-VS1) back to the impact crusher.
I.3	Belt Conveyor B3-BC2 to Impact Crusher B2-IC1 & Crushing	Before August 1971	LCrush	540,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B2-DC1	18,922	0.0054	0.0024	0.0002	lb/ton	1.46	0.65	0.05	Assume all process materials from the quarry plus recycle/recrush from Primary Screen (B3-VS1) are moved through this transfer point. Throughput value provided by CP on 3/31/2015.
I.9	Vibrating Screen B3-VS1 to Belt Conveyor B3-BC3	Before August 1971	LTrStnU	3,240,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B3-DC1	12,434	0.0396	0.0187	0.0028	lb/ton	64.17	30.35	4.60	Assume all process materials from the quarry plus recycle/recrush from Primary Screen (B3-VS1) are moved through this transfer point. Throughput value provided by CP on 3/31/2015.
II. Overland Conveyor System																				
II.1	Belt Conveyor B5-BC1 to Belt Conveyor B5-BC2	Before August 1971	LTrStnU	2,700,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B5-DC1	2,601	0.0396	0.0187	0.0028	lb/ton	53.47	25.29	3.83	Assume all process materials from the quarry plus recycle/recrush from Primary Screen (B3-VS1) are moved through this transfer point. Throughput value provided by CP on 3/31/2015.
II.2	Belt Conveyor B5-BC2 to Belt Conveyor B5-BC3	Before August 1971	LTrStnU	2,700,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B5-DC2	1,138	0.0396	0.0187	0.0028	lb/ton	53.47	25.29	3.83	Assume all process materials from the quarry plus recycle/recrush from Primary Screen (B3-VS1) are moved through this transfer point. Throughput value provided by CP on 3/31/2015.
II.3	Belt Conveyor B5-BC3 to Belt Conveyor B5-BC4	Before August 1971	LTrStnU	2,700,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B5-DC3	1,976	0.0396	0.0187	0.0028	lb/ton	53.47	25.29	3.83	Assume all process materials from the quarry plus recycle/recrush from Primary Screen (B3-VS1) are moved through this transfer point. Throughput value provided by CP on 3/31/2015.
III. Stacker/Reclaimer and Storage Area																				
III.1	Belt Conveyor B5-BC4 to Belt Conveyor B7-BC1	Before August 1971	LTrStnU	2,430,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B7-DC1	4,175	0.0396	0.0187	0.0028	lb/ton	48.12	22.76	3.45	Assume 90% of process materials from the quarry are moved through the Stacker/Reclaimer Building
III.2	Belt Conveyor B5-BC4 to Belt Conveyor B11-BC1	2020	AggTrnsfr	800,000	tons	--	--	PM ≤ 0.032 g/dscm	NSPS Subpart OOO	Yes	Dust Collector B7-DC1	4,175	0.00049	0.00023	0.000035	lb/ton	0.20	0.09	0.01	Limit for the Twin Peaks Rock and Stone Aggregate Plant
III.3	Belt Conveyor B5-BC4 to Belt Conveyor B8-BC1	Before August 1971	LTrStnU	556,194	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B8-DC1	1,882	0.0396	0.0187	0.0028	lb/ton	11.01	5.21	0.79	Assume 10% of materials from Belt Conveyor B5-BC4 go to Rock Storage (see Drawing 40-N-0111). Per CP Spreadsheet on 3/31/15
III.4	Belt Conveyor B8-BC1 to Belt Conveyor B8-BC1A	Before August 1971	LTrStnU	556,194	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B8-DC2	3,500	0.0396	0.0187	0.0028	lb/ton	11.01	5.21	0.79	
III.5	Belt Conveyor B11-BC1 to Belt Conveyor B11-BC2	2020	AggTrnsfr	800,000	tons	--	--	PM ≤ 0.032 g/dscm	NSPS Subpart OOO	Yes	Dust Collector B11-DC1	5,250	0.00049	0.00023	0.000035	lb/ton	0.20	0.09	0.01	Limit for the Twin Peaks Rock and Stone Aggregate Plant
IV. Roller Mill Feed Area																				
IV.1	Belt Conveyor C2-BC3 to Belt Conveyor C2-BC4	Before August 1971	LTrStnU	0	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector C2-DC1	1,795	0.0396	0.0187	0.0028	lb/ton	0.00	0.00	0.00	This belt is no longer present. (Originally installed in 1971)

Table F-2 Potential Pre-Control Device Emissions for CAM Analysis

Emission Source		Year Equipment Installed	Process Code	Annual Maximum Capacity / Process Rate	Units	Applicable Emission Limitations and Standards					Control Device	Approximate Dust Collector Flow Rate (dscfm)	Pre-Control Emission Factors				Pre-Control Emissions (ton/year)			Process Rate Information
						State Regulations or NSPS/NESHAP Regulations Proposed on or Before 11/15/1990		NSPS/NESHAP Regulations Proposed After 11/15/1990		Exempt from CAM?										
ID	Description					Emission Limitation/ Standard	Citation	Emission Limitation/ Standard	Citation				PM	PM_{10}	$PM_{2.5}$	Units	PM	PM_{10}	$PM_{2.5}$	
IV.2	Belt Conveyor C2-BC3 to Belt Conveyor C2-BC7	Before August 1971	LTrStnU	2,196,191	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector C2-DC1	1,795	0.0396	0.0187	0.0028	lb/ton	43.49	20.57	3.12	
IV.3	Belt Conveyor C2-BC7 to Storage Bin C2-SB7	2000	LTrStnU	1,098,096	tons	PM/PM_{10} ≤ 0.198 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC3	11,067	0.0396	0.0187	0.0028	lb/ton	21.75	10.29	1.56	Assume 1/2 of material from C2-BC7 moves into this surge bin. This dust collector is subject to an emission limit from the facility's Consent Decree.
IV.4	Belt Conveyor C2-BC7 to Storage Bin C2-SB8	2000	LTrStnU	1,098,096	tons	PM/PM_{10} ≤ 0.198 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC3	11,067	0.0396	0.0187	0.0028	lb/ton	21.75	10.29	1.56	Assume 1/2 of material from C2-BC7 moves into this surge bin. This dust collector is subject to an emission limit from the facility's Consent Decree.
IV.5	Belt Scale D4-BS1 to Belt Conveyor D4-BC1	2000	LTrStnU	1,098,096	tons	PM/PM_{10} ≤ 0.269 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector D4-DC1	8,693	0.0396	0.0187	0.0028	lb/ton	21.75	10.29	1.56	Assume all materials from Surge Bin C2-SB8 move to this belt scale. This dust collector is subject to an emission limit from the facility's Consent Decree.
IV.6	Belt Scale D4-BS2 to Belt Conveyor D4-BC1	2000	LTrStnU	1,098,096	tons	PM/PM_{10} ≤ 0.269 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector D4-DC1	8,693	0.0396	0.0187	0.0028	lb/ton	21.75	10.29	1.56	Assume all materials from Surge Bin C2-SB8 move to this belt scale. This dust collector is subject to an emission limit from the facility's Consent Decree.
IV.7	Belt Scale D4-BS3 to Belt Conveyor D4-BC1	2009	LTrStnU	79,296	tons	PM/PM_{10} ≤ 0.269 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector D4-DC1	8,693	0.0396	0.0187	0.0028	lb/ton	1.57	0.74	0.11	From 3/31/15 CP Spreadsheet. This dust collector is subject to an emission limit from the facility's Consent Decree.
IV.8	Belt Scale D4-BS4 to Belt Conveyor D4-BC1	2000	LTrStnU	100,743	tons	PM/PM_{10} ≤ 0.269 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector D4-DC1	8,693	0.0396	0.0187	0.0028	lb/ton	2.00	0.94	0.14	From 3/31/15 CP Spreadsheet. This dust collector is subject to an emission limit from the facility's Consent Decree.
IV.9	Belt Scale D4-BS5 to Belt Conveyor D4-BC1	2000	LTrStnU	100,000	tons	PM/PM_{10} ≤ 0.269 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector D4-DC1	8,693	0.0396	0.0187	0.0028	lb/ton	1.98	0.94	0.14	From 3/31/15 CP Spreadsheet. This dust collector is subject to an emission limit from the facility's Consent Decree.
IV.10	Belt Scale D4-BS6 to Belt Conveyor D4-BC1	2006	LTrStnU	23,770	tons	PM/PM_{10} ≤ 0.269 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector D4-DC1	8,693	0.0396	0.0187	0.0028	lb/ton	0.47	0.22	0.03	From 3/31/15 CP Spreadsheet. This dust collector is subject to an emission limit from the facility's Consent Decree.
IV.11	Bucket Elevator D4-BE1 to Drag Conveyor D4-DR1	2000	LTrStnU	303,809	tons	PM/PM_{10} ≤ 0.184 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector D4-DC2	5,091	0.0396	0.0187	0.0028	lb/ton	6.02	2.85	0.43	Sum of Bauxite/Alumina, High Lime Rock, Low-Grade Limestone and Magnetite/Hematite/Iron, above. This dust collector is subject to an emission limit from the facility's Consent Decree.
IV.12	Drag Conveyor D4-DR1 to Storage Bins D4-SB3, D4-SB4, D4-SB5, and D4-SB6	2000	LTrStnU	303,809	tons	PM/PM_{10} ≤ 0.184 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector D4-DC2	5,091	0.0396	0.0187	0.0028	lb/ton	6.02	2.85	0.43	Sum of Bauxite/Alumina, High Lime Rock, Low-Grade Limestone and Magnetite/Hematite/Iron, above. This dust collector is subject to an emission limit from the facility's Consent Decree.
V. Roller Mill																				
V.1	Separator D4-SS1 to Cyclone D4-CC1	2000	RMillSep	625,000	tons	PM/PM_{10} ≤ 12.5 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector H5-GB	152,853	0.6720	0.6480	0.2933	lb/ton	210.00	202.50	91.67	Total material throughput from Conveyor D4-BC1 is 2,500,000 TPY from 3/31/15 Spreadsheet from CP. Assume this value is divided evenly between the 4 separators. * This equipment (separators) function as product collectors in the D4 Roller Mill Process and should therefore not be subject to CAM. Additionally, the separators vent to the H5-GB Baghouse which has continuous monitoring requirements as outlined in NESHAPS Subpart LLL. The continuous monitoring requirements Subpart LLL provide more stringent monitoring than CAM.
V.2	Separator D4-SS1 to Cyclone D4-CC2	2000	RMillSep	625,000	tons	PM/PM_{10} ≤ 12.5 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector H5-GB	152,853	0.6720	0.6480	0.2933	lb/ton	210.00	202.50	91.67	
V.3	Separator D4-SS1 to Cyclone D4-CC3	2000	RMillSep	625,000	tons	PM/PM_{10} ≤ 12.5 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector H5-GB	152,853	0.6720	0.6480	0.2933	lb/ton	210.00	202.50	91.67	
V.4	Separator D4-SS1 to Cyclone D4-CC4	2000	RMillSep	625,000	tons	PM/PM_{10} ≤ 12.5 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector H5-GB	152,853	0.6720	0.6480	0.2933	lb/ton	210.00	202.50	91.67	
VI. Homogenizing and Kiln Feed Silos																				
VI.1	Air Slide D4-AS3 to Homogenizing Silo F2-SB1	After August 1971	CTrStn	2,500,000	tons	PM/PM_{10} ≤ 0.411 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-DC1	9,600	0.7300	0.4700	0.4700	lb/ton	912.50	587.50	587.50	Total material output from Roller mill through D4-AS3; silo installed in 1971.
VI.2	Air Slide F2-AS5 to Pneumatic Conveyance System F2-POD	After August 1971	CTrStn	675,000	tons	PM/PM_{10} ≤ 0.011 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-DC4	718	0.7300	0.4700	0.4700	lb/ton	246.38	158.63	158.63	From CalPortland Spreadsheet on 3/31/15. This dust collector is subject to an emission limit from the facility's Consent Decree.
VI.3	Air Slide F2-AS3 to Kiln Feed Storage Silo F3-SB1	After August 1971	CTrStn	912,500	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector F3-DC1	1,493	0.7300	0.4700	0.4700	lb/ton	333.06	214.44	214.44	Assume 50% of material from Homogenizing Silo (not including materials that go to F2-POD) goes to each of these Kiln Feed Silos. Silos installed after August of 1971.
VI.4	Air Slide F2-AS3 to Kiln Feed Storage Silo F3-SB2	After August 1971	CTrStn	912,500	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector F3-DC2	1,653	0.7300	0.4700	0.4700	lb/ton	333.06	214.44	214.44	
VII. Raw Feed Materials to Rock Storage																				

Table F-2 Potential Pre-Control Device Emissions for CAM Analysis

Emission Source		Year Equipment Installed	Process Code	Annual Maximum Capacity / Process Rate	Units	Applicable Emission Limitations and Standards					Control Device	Approximate Dust Collector Flow Rate (dscfm)	Pre-Control Emission Factors				Pre-Control Emissions (ton/year)			Process Rate Information
						State Regulations or NSPS/NESHAP Regulations Proposed on or Before 11/15/1990		NSPS/NESHAP Regulations Proposed After 11/15/1990		Exempt from CAM?										
ID	Description					Emission Limitation/ Standard	Citation	Emission Limitation/ Standard	Citation				PM	PM_{10}	$PM_{2.5}$	Units	PM	PM_{10}	$PM_{2.5}$	
VII.1	Pan Conveyor B9-PF1 to Belt Conveyor B9-BC1	1949	LTrStnU	100,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B9-DC1	3,640	0.0396	0.0187	0.0028	lb/ton	1.98	0.94	0.14	From Renewal Applicaation Input: High Lime Rock from Stockpile to Crusher 1
VII.2	Belt Conveyor B9-BC1 to Vibrating Screen B9-VS1	1949	LTrStnU	100,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B9-DC2	17,317	0.0396	0.0187	0.0028	lb/ton	1.98	0.94	0.14	From Renewal Applicaation Input: High Lime Rock from Stockpile to Crusher 1
VII.3	Belt Conveyor B9-BC3 to Vibrating Screen B9-VS1	1949	LTrStnU	15,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B9-DC2	17,317	0.0396	0.0187	0.0028	lb/ton	0.30	0.14	0.02	Assume 15% of materials from Belt Conveyor B9-BC1 is recycled/rescreened.
VII.4	Vibrating Screen B9-VS1	2009	LScreen	115,000	tons	--	--	PM ≤ 0.05 g/dscm Opacity ≤ 7%	NSPS Subpart OOO	Yes	Dust Collector B9-DC2	17,317	0.0250	0.0087	0.0002	lb/ton	1.44	0.50	0.01	Exempt from CAM.
VII.5	Belt Conveyor B9-BC2 to Vibrating Screen B9-VS2	1949	LTrStnU	115,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B9-DC3	9,200	0.0396	0.0187	0.0028	lb/ton	2.28	1.08	0.16	Sum of High Lime Rock from Stockpile to Crusher 1 plus recycled materials that are rescreened.
VII.6	Vibrating Screen B9-VS2	1952	LScreen	115,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	---	---	No	Dust Collector B9-DC3	9,200	0.0250	0.0087	0.0002	lb/ton	1.44	0.50	0.01	Installed in 1952.
VII.7	Vibrating Screen B9-VS2 to Belt Conveyor B9-BC4	1952	LTrStnU	115,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B9-DC3	9,200	0.0396	0.0187	0.0028	lb/ton	2.28	1.08	0.16	Sum of High Lime Rock from Stockpile to Crusher 1 plus recycled materials that are rescreened.
VII.8	Impact Crusher B9-IC to Belt Conveyor B9-BC2	1949	LCrush	115,000	tons	PM ≤ $17.31P^{0.16}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-522.A.2 A.A.C. R18-2-702.B	--	--	No	Dust Collector B9-DC5	2,800	0.0054	0.0024	0.0002	lb/ton	0.31	0.14	0.01	Sum of High Lime Rock from Stockpile to Crusher 1 plus recycled materials that are rescreened.
VIII. Raw Grinding - AC Area																				
VIII.1	Belt Scale AC-BS1 to Belt Conveyor AC-BC1	1996	LTrStnU	12,815	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector AC-DC3	18,952	0.0396	0.0187	0.0028	lb/ton	0.25	0.12	0.02	Iron Product, added at plant (from 3/31/15 spreadsheet sent by CP). AC-BS1 was installed in 1996.
VIII.2	Belt Scale AC-BS2 to Belt Conveyor AC-BC1	1996	LTrStnU	10,442	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector AC-DC3	18,952	0.0396	0.0187	0.0028	lb/ton	0.21	0.10	0.01	Alumina materials, added at plant (from 3/31/15 spreadsheet sent by CP). AC-BS2 was installed in 1996.
VIII.3	Separator AC1-SS1 to AC-S1	1949	LTrStnU	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC-DC3	18,952	0.0396	0.0187	0.0028	lb/ton	3.34	1.58	0.24	AC-BE1 moves the Iron and Alumina Sources listed above in this section of the plant, plus High -High / Low Grade Limestone (33,750 TPY) and Mix Rock (617,993 TPY)). Assume materials from this bucket elevator are split up evenly between the 4 AC mills. Equipment installed in 1949.
VIII.4	Separator AC1-SS2 to AC-S1	1949	LTrStnU	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC-DC3	18,952	0.0396	0.0187	0.0028	lb/ton	3.34	1.58	0.24	
VIII.5	Separator AC1-SS3 to AC-S1	1949	LTrStnU	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC-DC3	18,952	0.0396	0.0187	0.0028	lb/ton	3.34	1.58	0.24	
VIII.6	Separator AC1-SS4 to AC-S1	1949	LTrStnU	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC-DC3	18,952	0.0396	0.0187	0.0028	lb/ton	3.34	1.58	0.24	
VIII.7	AC1-Mill	1949	RMill	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC1-DC1	18,952	2.4000	1.0800	0.2000	lb/ton	202.50	91.12	16.88	Maximum Material Processed through AC Mills 1 through 4 is 675,000 TPY; this is divided evenly between the 4 mills (from 3/31/15 information sent by CP). Equipment installed in 1949.
VIII.8	Screw Conveyor AC1-SC1 to Bucket Elevator AC1-BE1	1949	CTrStn	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC1-DC1	18,952	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
VIII.9	Bucket Elevator AC1-BE1 to Separator AC1-SS	1949	RMillSep	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC1-DC1	18,952	0.6720	0.6480	0.2933	lb/ton	56.70	54.67	24.75	
VIII.10	AC2-Mill	1949	RMill	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC2-DC1	7,535	2.4000	1.0800	0.2000	lb/ton	202.50	91.12	16.88	Maximum Material Processed through AC Mills 1 through 4 is 675,000 TPY; this is divided evenly between the 4 mills (from 3/31/15 information sent by CP). Equipment installed in 1949.
VIII.11	Screw Conveyor AC2-SC1 to Bucket Elevator AC2-BE1	1949	CTrStn	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC2-DC1	7,535	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
VIII.12	Bucket Elevator AC2-BE1 to Separator AC2-SS	1949	RMillSep	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC2-DC1	7,535	0.6720	0.6480	0.2933	lb/ton	56.70	54.67	24.75	
VIII.13	AC3-Mill	1949	RMill	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC3-DC1	4,472	2.4000	1.0800	0.2000	lb/ton	202.50	91.12	16.88	Maximum Material Processed through AC Mills 1 through 4 is 675,000 TPY; this is divided evenly between the 4 mills (from 3/31/15 information sent by CP). Equipment installed in 1949.
VIII.14	Screw Conveyor AC3-SC1 to Bucket Elevator AC3-BE1	1949	CTrStn	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC3-DC1	4,472	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
VIII.15	Bucket Elevator AC3-BE1 to Separator AC3-SS	1949	RMillSep	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC3-DC1	4,472	0.6720	0.6480	0.2933	lb/ton	56.70	54.67	24.75	
VIII.16	AC4-Mill	1949	RMill	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC4-DC1	4,958	2.4000	1.0800	0.2000	lb/ton	202.50	91.12	16.88	Maximum Material Processed through AC Mills 1 through 4 is 675,000 TPY; this is divided evenly between the 4 mills (from 3/31/15 information sent by CP). Equipment installed in 1949.
VIII.17	Screw Conveyor AC4-SC1 to Bucket Elevator AC4-BE1	1949	CTrStn	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC4-DC1	4,958	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
VIII.18	Bucket Elevator AC4-BE1 to Separator AC4-SS	1949	RMillSep	168,750	tons	PM ≤ $3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC4-DC1	4,958	0.6720	0.6480	0.2933	lb/ton	56.70	54.67	24.75	
IX. Proportioning Silos																				

Table F-2 Potential Pre-Control Device Emissions for CAM Analysis

Emission Source		Year Equipment Installed	Process Code	Annual Maximum Capacity / Process Rate	Units	Applicable Emission Limitations and Standards					Control Device	Approximate Dust Collector Flow Rate (dscfm)	Pre-Control Emission Factors				Pre-Control Emissions (ton/year)			Process Rate Information
						State Regulations or NSPS/NESHAP Regulations Proposed on or Before 11/15/1990		NSPS/NESHAP Regulations Proposed After 11/15/1990		Exempt from CAM?										
ID	Description					Emission Limitation/ Standard	Citation	Emission Limitation/ Standard	Citation				PM	PM_{10}	$PM_{2.5}$	Units	PM	PM_{10}	$PM_{2.5}$	
IX.1	Screw Conveyor AC-SC3 to Bucket Elevator AC-BE2	1955	CTrStn	675,000	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC-BE2-DC	4,522	0.7300	0.4700	0.4700	lb/ton	246.38	158.63	158.63	Total materials from 4 Raw Mills, above.
IX.2	Bucket Elevator AC-BE2 to Screw Conveyor AC-SC4	1955	CTrStn	675,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector AC-BE2-DC	4,522	0.7300	0.4700	0.4700	lb/ton	246.38	158.63	158.63	Total materials from 4 Raw Mills, above. Installed in 2000.
IX.3	Pneumatic Conveyance System F2-POD to Alleviator AC-A1	2000	CTrStn	675,000	tons	$PM/PM_{10} \leq 0.139$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector AC-DC1	3,889	0.7300	0.4700	0.4700	lb/ton	246.38	158.63	158.63	Same amount as assumed above for F2-POD. This dust collector is subject to an emission limit from the facility's Consent Decree. Equipment installed in 2000.
IX.4	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB1	1949	CTrStn	168,750	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC1	2,403	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	Conveyors AC-S6 and AC-S5 move half of the total material coming into the proportioning silos. (AC-A1 + AC-BE2). Each silo is assumed to receive 1/6 of the material from the associated conveyors.
IX.5	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB3	1949	CTrStn	168,750	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC1	2,403	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
IX.6	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB5	1949	CTrStn	168,750	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC1	2,403	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
IX.7	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB7	1951	CTrStn	168,750	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC1	2,403	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
IX.8	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB9	1951	CTrStn	168,750	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC1	2,403	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
IX.9	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB11	1951	CTrStn	168,750	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC1	2,403	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
IX.10	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB2	1949	CTrStn	168,750	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC2	880	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	Conveyors AC-S6 and AC-S5 move half of the total material coming into the proportioning silos. (AC-A1 + AC-BE2). Each silo is assumed to receive 1/6 of the material from the associated conveyors.
IX.11	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB4	1949	CTrStn	168,750	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC2	880	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
IX.12	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB6	1949	CTrStn	168,750	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC2	880	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
IX.13	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB8	1951	CTrStn	168,750	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC2	880	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
IX.14	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB10	1951	CTrStn	168,750	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC2	880	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
IX.15	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB12	1951	CTrStn	168,750	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC2	880	0.7300	0.4700	0.4700	lb/ton	61.59	39.66	39.66	
IX.16	Screw Conveyor F2-PS-SC4 to Bucket Elevator F2-PS-BE1	Unknown	CTrStn	1,350,000	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC3	1,400	0.7300	0.4700	0.4700	lb/ton	492.75	317.25	317.25	Total materials out of the proportioning silos = materials into silos = AC-A1 + AC-BE2
IX.17	Bucket Elevator F2-PS-BE1 to Screw Conveyor F2-PS-SC5	Unknown	CTrStn	1,350,000	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F2-PS-DC3	1,400	0.7300	0.4700	0.4700	lb/ton	492.75	317.25	317.25	Total materials out of the proportioning silos = materials into silos = AC-A1 + AC-BE2
X. Kilns 1, 2, and 3 Feed Silos																				
X.1	Screw Conveyor F2-PS-SC9 to Silo F3-KS-SB1	1949	CTrStn	225,000	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F3-KS-DC1	751	0.7300	0.4700	0.4700	lb/ton	82.13	52.88	52.88	Each kiln silo is assumed to receive 1/6 of the material from F2-PS-SC5
X.2	Screw Conveyor F2-PS-SC9 to Silo F3-KS-SB2	1949	CTrStn	225,000	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F3-KS-DC1	751	0.7300	0.4700	0.4700	lb/ton	82.13	52.88	52.88	
X.3	Screw Conveyor F2-PS-SC10 to Silo F3-KS-SB3	1949	CTrStn	225,000	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F3-KS-DC1	751	0.7300	0.4700	0.4700	lb/ton	82.13	52.88	52.88	
X.4	Screw Conveyor F2-PS-SC10 to Silo F3-KS-SB4	1951	CTrStn	225,000	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F3-KS-DC1	751	0.7300	0.4700	0.4700	lb/ton	82.13	52.88	52.88	
X.5	Screw Conveyor F2-PS-SC11 to Silo F3-KS-SB5	1951	CTrStn	225,000	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F3-KS-DC1	751	0.7300	0.4700	0.4700	lb/ton	82.13	52.88	52.88	
X.6	Screw Conveyor F2-PS-SC11 to Silo F3-KS-SB6	1951	CTrStn	225,000	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector F3-KS-DC1	751	0.7300	0.4700	0.4700	lb/ton	82.13	52.88	52.88	
XI. Kilns 1, 2, and 3																				
XI.1	Screw Conveyor F3-KS-SC5 to Kiln #1 Bin	1949	CTrStn	450,000	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H4-K1-DC	400	0.7300	0.4700	0.4700	lb/ton	164.25	105.75	105.75	Assume each kiln gets 1/3 of the total material out of the Kiln Silos.
XI.2	Screw Conveyor F3-KS-SC5 to Kiln #2 Bin	1951	CTrStn	450,000	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H4-K2-DC	375	0.7300	0.4700	0.4700	lb/ton	164.25	105.75	105.75	
XI.3	Screw Conveyor F3-KS-SC5 to Kiln #3 Bin	1955	CTrStn	450,000	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H4-K3-DC	1,400	0.7300	0.4700	0.4700	lb/ton	164.25	105.75	105.75	

Table F-2 Potential Pre-Control Device Emissions for CAM Analysis

Emission Source		Year Equipment Installed	Process Code	Annual Maximum Capacity / Process Rate	Units	Applicable Emission Limitations and Standards					Control Device	Approximate Dust Collector Flow Rate (dscfm)	Pre-Control Emission Factors				Pre-Control Emissions (ton/year)			Process Rate Information
						State Regulations or NSPS/NESHAP Regulations Proposed on or Before 11/15/1990		NSPS/NESHAP Regulations Proposed After 11/15/1990		Exempt from CAM?										
ID	Description					Emission Limitation/ Standard	Citation	Emission Limitation/ Standard	Citation				PM	PM_{10}	$PM_{2.5}$	Units	PM	PM_{10}	$PM_{2.5}$	
XI.4	Kilns 1, 2, and 3 exhaust to H5-5-GB Baghouse	1978	DryKiln	370,000	tons	$PM/PM_{10} \leq 9.89$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector / Baghouse H5-5-GB	143,662	0.2000	0.1700	0.0141	lb/ton	37.00	31.45	2.61	Emission Factor for these process units is in lbss/ton of Clinker produced instead of lbs/ton of kiln feed.
XI.5	Screw Conveyor H5-5-GB-SC3 to Bucket Elevator H5-5-GB-BE1	1978	CTrStn	135,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector H5-5-DC1	1,863	0.7300	0.4700	0.4700	lb/ton	49.28	31.73	31.73	This is the conveyor for moving dust from the H5-5-GB dust collectors back into the kiln. Assume 10% of the total kiln feed value.
XI.6	Dust Pump H5-5-FP1 to H5-5 Waste Dust Bin	After August 1971	CTrStn	25	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector H5-5-DC2	1,860	0.7300	0.4700	0.4700	lb/ton	0.01	0.01	0.01	Inert materials only. Value from Rich Walters (CP) on 4/2/15.
XII. Clinker Coolers 1, 2, and 3																				
XII.1	Clinker Cooler H2-QC1 Exhaust	1949	ClinkerCool	123,333	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H2-1-DC	17,851	0.1300	0.0585	0.0108	lb/ton	8.02	3.61	0.67	Per CP spreadsheet on 4/2/15.
XII.2	Clinker Cooler H2-QC1 to Drag Conveyor H2-QC1-DR1	1949	CTrStn	123,333	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H2-1-DC	17,851	0.7300	0.4700	0.4700	lb/ton	45.02	28.98	28.98	Per CP spreadsheet on 4/2/15.
XII.3	Clinker Cooler H2-QC2 Exhaust	1951	ClinkerCool	123,333	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H2-2-DC	26,851	0.1300	0.0585	0.0108	lb/ton	8.02	3.61	0.67	Per CP spreadsheet on 4/2/15.
XII.4	Clinker Cooler H2-QC2 to Drag Conveyor H2-QC2-DR1	1951	CTrStn	123,333	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H2-2-DC	26,851	0.7300	0.4700	0.4700	lb/ton	45.02	28.98	28.98	Per CP spreadsheet on 4/2/15.
XII.5	Clinker Cooler H2-QC3 Exhaust	1955	ClinkerCool	123,333	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H2-3-DC	17,851	0.1300	0.0585	0.0108	lb/ton	8.02	3.61	0.67	Per CP spreadsheet on 4/2/15.
XII.6	Clinker Cooler H2-QC3 to Drag Conveyor H2-QC3-DR1	1955	CTrStn	123,333	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H2-3-DC	40,473	0.7300	0.4700	0.4700	lb/ton	45.02	28.98	28.98	Per CP spreadsheet on 4/2/15.
XII.7	Bucket Elevator H2-K1-BE1 to Belt Conveyor H2-KB1	1949	CTrStn	123,333	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H2-KB1-DC	4,651	0.7300	0.4700	0.4700	lb/ton	45.02	28.98	28.98	Per CP spreadsheet on 4/2/15.
XII.8	Bucket Elevator H2-K2-BE1 to Pan Feeder H2-PF2 (Magaldi)	1951	CTrStn	123,333	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H2-KB3-DC	3,000	0.7300	0.4700	0.4700	lb/ton	45.02	28.98	28.98	Per CP spreadsheet on 4/2/15.
XII.9	Drag Conveyor H2-K3-DR1 to Bucket Elevator H2-K3-BE1	1955	CTrStn	123,333	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H2-KB3-DC	3,000	0.7300	0.4700	0.4700	lb/ton	45.02	28.98	28.98	Per CP spreadsheet on 4/2/15.
XII.10	Bucket Elevator H2-K3-BE1 to Pan Feeder H2-PF2	1955	CTrStn	123,333	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H2-KB3-DC	3,000	0.7300	0.4700	0.4700	lb/ton	45.02	28.98	28.98	Per CP spreadsheet on 4/2/15.
XIII. Preheater and Kiln 4																				
XIII.1	Air Slide F3-AS6 to Raw Mix Bin H4-SB-KS	After August 1971	CTrStn	1,825,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector H4-DC1	1,750	0.7300	0.4700	0.4700	lb/ton	666.13	428.88	428.88	Amounts from Kiln Feed Storage Silos No. 1 and No. 2, above.
XIII.2	Belt Scale H4-BS1 to Bucket Elevator H4-BE1	After August 1971	CTrStn	1,825,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector H4-DC1	1,750	0.7300	0.4700	0.4700	lb/ton	666.13	428.88	428.88	Amounts from Kiln Feed Storage Silos No. 1 and No. 2, above.
XIII.3	Bucket Elevator H4-BE1 to Bucket Elevator H4-BE2	After August 1971	CTrStn	1,825,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector H4-DC1	1,750	0.7300	0.4700	0.4700	lb/ton	666.13	428.88	428.88	Amounts from Kiln Feed Storage Silos No. 1 and No. 2, above.
XIII.4	Kiln 4 Exhaust to H5-GB Baghouse	1972	PreCalKiln	1,825,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector / Baghouse H5-GB	189,549	0.2100	0.0945	0.0175	lb/ton	191.63	86.23	15.97	The H5-GB baghouse is subject COMS monitoring and will be required to monitor PM emissions via PM CPMS under new 40 CFR 63 Subpart LLL requirements (which go into effect on September 9, 2015).
XIII.5	Bucket Elevator H5-BE1 to H5 Dust Bin	After August 1971	CTrStn	170,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector H5-K4-DC1 / H5-DC1	1,289	0.7300	0.4700	0.4700	lb/ton	62.05	39.95	39.95	Dust from Kiln 4 and D4 Roller Mill; from 3/31/15 CP Spreadsheet.
XIV. Clinker Cooler 4																				
XIV.1	Clinker Cooler Exhaust to H2-GB Baghouse	After August 1971	ClinkerCool	1,150,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector / Baghouse H2-GB	110,219	0.1300	0.0585	0.0108	lb/ton	74.75	33.64	6.23	Maximum actual production form 4/2/15 CP Spreadsheet
XIV.2	Drag Conveyor H2-DR1 to Pan Feeder H2-PF1	After August 1971	CTrStn	1,150,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector H2-DC1	3,600	0.7300	0.4700	0.4700	lb/ton	419.75	270.25	270.25	Maximum actual production form 4/2/15 CP Spreadsheet
XIV.3	Pan Feeder H2-PF1 to Pan Feeder H2-PF2 (Magaldi)	2000	CTrStn	1,150,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector H2-DC1	3,600	0.7300	0.4700	0.4700	lb/ton	419.75	270.25	270.25	Maximum actual production form 4/2/15 CP Spreadsheet. Equipment installed in 2000.
XIV.4	Pan Feeder H2-PF2 to Rock Storage	2000	CTrStn	712,042	tons	$PM/PM_{10} \leq 0.01$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector H2-DC2	8,138	0.7300	0.4700	0.4700	lb/ton	259.90	167.33	167.33	Equivalent to D2 Mill, Gypsum, Limestone, and Kilns 2 and 3 production, above. This dust collector is subject to an emission limit contained in the facility's consent decree. Equipment installed in 2000.
XIV.5	Bucket Elevator H2-BE1 to Storage Bin H2-SB1	2003	CTrStn	14,355	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector H2-DC3	Unknown	0.7300	0.4700	0.4700	lb/ton	5.24	3.37	3.37	This is the Bypass Bin - assume permit maximum operation of 99 hours per year at 145 TPH production capacity (K3 + K4). Installed in 2003.

Table F-2 Potential Pre-Control Device Emissions for CAM Analysis

Emission Source		Year Equipment Installed	Process Code	Annual Maximum Capacity / Process Rate	Units	Applicable Emission Limitations and Standards					Control Device	Approximate Dust Collector Flow Rate (dscfm)	Pre-Control Emission Factors				Pre-Control Emissions (ton/year)			Process Rate Information
						State Regulations or NSPS/NESHAP Regulations Proposed on or Before 11/15/1990		NSPS/NESHAP Regulations Proposed After 11/15/1990		Exempt from CAM?										
ID	Description					Emission Limitation/ Standard	Citation	Emission Limitation/ Standard	Citation				PM	PM_{10}	$PM_{2.5}$	Units	PM	PM_{10}	$PM_{2.5}$	
XV. Clinker/Gypsum Transport and Finish Mill Feed Bins																				
XV.1	Belt Conveyor C2-BC9 to Belt Conveyor C2-BC5	After August 1971	CTrStn	112,347	tons	$PM/PM_{10} \le 0.12$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC2	2,775	0.7300	0.4700	0.4700	lb/ton	41.01	26.40	26.40	
XV.2	Belt Conveyor C2-BC8 to Belt Conveyor C2-BC9	After August 1971	CTrStn	591,300	tons	$PM/PM_{10} \le 0.110$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC4	2,550	0.7300	0.4700	0.4700	lb/ton	215.82	138.96	138.96	From Rock Storage Building
XV.3	Belt Conveyor C2-BC11 to Storage Bin C2-SB1	1977	CTrStn	159,651	tons	$PM/PM_{10} \le 0.0.465$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC5	10,862	0.7300	0.4700	0.4700	lb/ton	58.27	37.52	37.52	Assumed to be 1/3 of materials from C2-BC10. Installed in 1977.
XV.4	Belt Conveyor C2-BC6 to Storage Bin C2-SB2	1977	CTrStn	53,217	tons	$PM/PM_{10} \le 0.077$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC6	1,833	0.7300	0.4700	0.4700	lb/ton	19.42	12.51	12.51	C2-BC5 (1/2 of C2-BC9) + C2-BC4. This is assumed to be distributed evenly between the two conveyors for bins 2 and 6 and the feed directly into bin 4. Installed in 1977.
XV.5	Belt Conveyor C2-BC10 to Storage Bin C2-SB3	After August 1971	CTrStn	159,651	tons	$PM/PM_{10} \le 0.102$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC7	2,400	0.7300	0.4700	0.4700	lb/ton	58.27	37.52	37.52	Assumed to be 1/3 of materials from C2-BC10.
XV.6	Belt Conveyor C2-BC5 to Storage Bin C2-SB4	After August 1971	CTrStn	23,562	tons	$PM/PM_{10} \le 0.110$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC8	2,550	0.7300	0.4700	0.4700	lb/ton	8.60	5.54	5.54	C2-BC5 (1/2 of C2-BC9) + C2-BC4. This is assumed to be distributed evenly between the two conveyors for bins 2 and 6 and the feed directly into bin 4.
XV.7	Belt Conveyor C2-BC11 to Storage Bin C2-SB5	1977	CTrStn	159,651	tons	$PM/PM_{10} \le 0.071$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC9	1,660	0.7300	0.4700	0.4700	lb/ton	58.27	37.52	37.52	Assumed to be 1/3 of materials from C2-BC10. Installed in 1977.
XV.8	Belt Conveyor C2-BC6A to Storage Bin C2-SB6	1977	CTrStn	35,478	tons	$PM/PM_{10} \le 0.110$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC10	2,575	0.7300	0.4700	0.4700	lb/ton	12.95	8.34	8.34	C2-BC5 (1/2 of C2-BC9) + C2-BC4. This is assumed to be distributed evenly between the two conveyors for bins 2 and 6 and the feed directly into bin 4. Installed in 1977.
XV.9	Belt Conveyor C2-BC9 to Belt Conveyor C2-BC10	After August 1971	CTrStn	478,953	tons	$PM/PM_{10} \le 0.112$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC11	2,625	0.7300	0.4700	0.4700	lb/ton	174.82	112.55	112.55	1/2 of material from C2-BC9, above.
XV.10	Belt Conveyor C2-BC10 to Belt Conveyor C2-BC11	After August 1971	CTrStn	478,953	tons	$PM/PM_{10} \le 0.110$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC12	2,576	0.7300	0.4700	0.4700	lb/ton	174.82	112.55	112.55	C2-BC11 is assumed to receive 2/3 of the material from C2-BC10, which is then distributed to bins 5 and 1
XV.11	Belt Conveyor C2-BC5 to Belt Conveyor C2-BC6	After August 1971	CTrStn	53,217	tons	$PM/PM_{10} \le 0.121$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC13	2,847	0.7300	0.4700	0.4700	lb/ton	19.42	12.51	12.51	C2-BC5 (1/2 of C2-BC9) + C2-BC4. This is assumed to be distributed evenly between the two conveyors for bins 2 and 6 and the feed directly into bin 4.
XV.12	Belt Conveyor C2-BC5 to Belt Conveyor C2-BC6A	After August 1971	CTrStn	35,478	tons	$PM/PM_{10} \le 0.121$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC13	2,847	0.7300	0.4700	0.4700	lb/ton	12.95	8.34	8.34	C2-BC5 (1/2 of C2-BC9) + C2-BC4. This is assumed to be distributed evenly between the two conveyors for bins 2 and 6 and the feed directly into bin 4.
XV.13	Belt Conveyor C2-BC4 to Belt Conveyor C2-BC5	After August 1971	CTrStn	0	tons	$PM/PM_{10} \le 0.121$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector C2-DC13	2,847	0.7300	0.4700	0.4700	lb/ton	0.00	0.00	0.00	This belt is no longer present
XV.14	Belt Conveyor D2-BC1 to Belt Conveyor D2-BC2	After August 1971	CTrStn	591,300	tons	$PM/PM_{10} \le 0.89$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector D2-DC1	20,757	0.7300	0.4700	0.4700	lb/ton	215.82	138.96	138.96	Sum of materials from all bins, above.
XV.15	Belt Conveyor D2-BC2 to Belt Conveyor D2-BC6	2001	CTrStn	591,300	tons	$PM/PM_{10} \le 0.037$ lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector D2-DC3	876	0.7300	0.4700	0.4700	lb/ton	215.82	138.96	138.96	Same as D2-BC1. Installed in 2001.
XV.16	Belt Scale D2-BS5 to Belt Conveyor D2-BC1	After August 1971	CTrStn	159,651	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D2-DC5	1,433	0.7300	0.4700	0.4700	lb/ton	58.27	37.52	37.52	Materials from Bin #5.
XV.17	Belt Scale D2-BS6 to Belt Conveyor D2-BC1	After August 1971	CTrStn	35,478	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D2-DC5	1,433	0.7300	0.4700	0.4700	lb/ton	12.95	8.34	8.34	Materials from Bin #6.
XV.18	Belt Scale D2-BS3 to Belt Conveyor D2-BC1	After August 1971	CTrStn	159,651	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D2-DC6	1,433	0.7300	0.4700	0.4700	lb/ton	58.27	37.52	37.52	Materials from bin #3.
XV.19	Belt Scale D2-BS4 to Belt Conveyor D2-BC1	After August 1971	CTrStn	23,562	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D2-DC6	1,433	0.7300	0.4700	0.4700	lb/ton	8.60	5.54	5.54	Materials from bin #4.
XV.20	Belt Scale D2-BS1 to Belt Conveyor D2-BC1	After August 1971	CTrStn	159,651	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D2-DC7	1,433	0.7300	0.4700	0.4700	lb/ton	58.27	37.52	37.52	Materials from bin #1.
XV.21	Belt Scale D2-BS2 to Belt Conveyor D2-BC1	After August 1971	CTrStn	53,217	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D2-DC7	1,433	0.7300	0.4700	0.4700	lb/ton	19.42	12.51	12.51	Materials from bin #2.
XVI. Finish Milling - CM Area																				
XVI.1	Mill CM1-M to Bucket Elevator CM1-BE1	1949	FMill	70,080	tons	$PM \le 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM1-DC1	7,283	1.6000	0.6154	0.6154	lb/ton	56.06	21.56	21.56	Mills CM 1-6 can produce 420,480 TPY; from 3/31/15 CP Spreadsheet. Assume this value is divided evenly among these mills.
XVI.2	Screw Conveyor CM1-SC1 to Separator CM1-SS	1949	FMillSep	70,080	tons	$PM \le 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM1-DC1	7,283	5.6000	2.1280	2.1280	lb/ton	196.22	74.57	74.57	Mills CM 1-6 can produce 420,480 TPY; from 3/31/15 CP Spreadsheet. Assume this value is divided evenly among these mills.

Table F-2 Potential Pre-Control Device Emissions for CAM Analysis

Emission Source		Year Equipment Installed	Process Code	Annual Maximum Capacity / Process Rate	Units	Applicable Emission Limitations and Standards					Control Device	Approximate Dust Collector Flow Rate (dscfm)	Pre-Control Emission Factors				Pre-Control Emissions (ton/year)			Process Rate Information
						State Regulations or NSPS/NESHAP Regulations Proposed on or Before 11/15/1990		NSPS/NESHAP Regulations Proposed After 11/15/1990		Exempt from CAM?										
ID	Description					Emission Limitation/ Standard	Citation	Emission Limitation/ Standard	Citation				PM	PM_{10}	$PM_{2.5}$	Units	PM	PM_{10}	$PM_{2.5}$	
XVI.3	Mill CM2-M to Bucket Elevator CM2-BE1	1949	FMill	70,080	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM2-DC1	10,358	1.6000	0.6154	0.6154	lb/ton	56.06	21.56	21.56	Mills CM 1-6 can produce 420,480 TPY; from 3/31/15 CP Spreadsheet. Assume this value is divided evenly among these mills.
XVI.4	Screw Conveyor CM2-SC1 to Separator CM2-SS	1949	FMillSep	70,080	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM2-DC1	10,358	5.6000	2.1280	2.1280	lb/ton	196.22	74.57	74.57	Mills CM 1-6 can produce 420,480 TPY; from 3/31/15 CP Spreadsheet. Assume this value is divided evenly among these mills.
XVI.5	Mill CM3-M to Bucket Elevator CM3-BE1	1951	FMill	70,080	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM3-DC1	18,952	1.6000	0.6154	0.6154	lb/ton	56.06	21.56	21.56	Mills CM 1-6 can produce 420,480 TPY; from 3/31/15 CP Spreadsheet. Assume this value is divided evenly among these mills.
XVI.6	Screw Conveyor CM3-SC1 to Separator CM3-SS	1951	FMillSep	70,080	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM3-DC1	18,952	5.6000	2.1280	2.1280	lb/ton	196.22	74.57	74.57	Mills CM 1-6 can produce 420,480 TPY; from 3/31/15 CP Spreadsheet. Assume this value is divided evenly among these mills.
XVI.7	Mill CM4-M to Bucket Elevator CM4-BE1	1955	FMill	70,080	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM4-DC1	3,681	1.6000	0.6154	0.6154	lb/ton	56.06	21.56	21.56	Mills CM 1-6 can produce 420,480 TPY; from 3/31/15 CP Spreadsheet. Assume this value is divided evenly among these mills.
XVI.8	Screw Conveyor CM4-SC1 to Separator CM4-SS	1955	FMillSep	70,080	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM4-DC1	3,681	5.6000	2.1280	2.1280	lb/ton	196.22	74.57	74.57	Mills CM 1-6 can produce 420,480 TPY; from 3/31/15 CP Spreadsheet. Assume this value is divided evenly among these mills.
XVI.9	Mill CM5-M to Bucket Elevator CM5-BE1	1955	FMill	70,080	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM5-DC1	18,952	1.6000	0.6154	0.6154	lb/ton	56.06	21.56	21.56	Mills CM 1-6 can produce 420,480 TPY; from 3/31/15 CP Spreadsheet. Assume this value is divided evenly among these mills.
XVI.10	Screw Conveyor CM5-SC1 to Separator CM5-SS	1955	FMillSep	70,080	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM5-DC1	18,952	5.6000	2.1280	2.1280	lb/ton	196.22	74.57	74.57	Mills CM 1-6 can produce 420,480 TPY; from 3/31/15 CP Spreadsheet. Assume this value is divided evenly among these mills.
XVI.11	Mill CM6-M to Bucket Elevator CM6-BE1	1960	FMill	70,080	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM6-DC1	18,952	1.6000	0.6154	0.6154	lb/ton	56.06	21.56	21.56	Mills CM 1-6 can produce 420,480 TPY; from 3/31/15 CP Spreadsheet. Assume this value is divided evenly among these mills.
XVI.12	Screw Conveyor CM6-SC1 to Separator CM6-SS	1960	FMillSep	70,080	tons	$PM \leq 3.59P^{0.62}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM6-DC1	18,952	5.6000	2.1280	2.1280	lb/ton	196.22	74.57	74.57	Mills CM 1-6 can produce 420,480 TPY; from 3/31/15 CP Spreadsheet. Assume this value is divided evenly among these mills.
XVI.13	Mill CM7-M	1969	FMill	255,000	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM7-DC1	10,710	1.6000	0.6154	0.6154	lb/ton	204.00	78.46	78.46	From 3/31/15 CP Spreadsheet - includes Type II/V, Extra, and Mortar Production.
XVI.14	Belt Scale CM7-BS1 to Belt Conveyor CM7-BC1	2003	CTrStn	215,550	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM7-DC2	6,273	0.7300	0.4700	0.4700	lb/ton	78.68	50.65	50.65	Clinker only; from 3/31/15 CP Spreadsheet - includes Type II/V, Extra, and Mortar Production
XVI.15	Belt Scale CM7-BS2 to Belt Conveyor CM7-BC1	2009	CTrStn	15,300	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM7-DC2	6,273	0.7300	0.4700	0.4700	lb/ton	5.58	3.60	3.60	Gypsum; from 3/31/15 CP Spreadsheet - includes Type II/V, Extra, and Mortar Production
XVI.16	Belt Scale CM7-BS3 to Belt Conveyor CM7-BC1	2009	CTrStn	23,220	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM7-DC2	6,273	0.7300	0.4700	0.4700	lb/ton	8.48	5.46	5.46	Limestone; from 3/31/15 CP Spreadsheet - includes Type II/V, Extra, and Mortar Production
XVI.17	Separator CM7-SS1	1997	FMillSep	255,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM7-DC3	35,107	5.6000	2.1280	2.1280	lb/ton	714.00	271.32	271.32	CM7-DC3 is a product collector - not subject to CAM. 1/3 of the clinker from Kilns1 through 3 moves through this mill system.
XVI.18	Drag Conveyor CM-DR1 to Mill CM2-M	1949	CTrStn	70,080	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM-DC4	12,562	0.7300	0.4700	0.4700	lb/ton	25.58	16.47	16.47	Bucket Elevator CM-BE1 is still present in this area, but is no longer used to move materials to mills CM1-M and CM2-M; therefore, it is not listed in this CAM analysis.
XVI.19	Drag Conveyor CM-DR1 to Mill CM1-M	1949	CTrStn	70,080	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM-DC4	12,562	0.7300	0.4700	0.4700	lb/ton	25.58	16.47	16.47	
XVI.20	Bucket Elevator CM-BE4 to Drag Conveyor CM-DR1	1959	CTrStn	140,160	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM-DC5	19,312	0.7300	0.4700	0.4700	lb/ton	51.16	32.94	32.94	1/3 of the total materials from CMBS1, 2, and 3; Clinker, Gypsum and Limestone values from 3/31/15 CP Spreadsheet. Equipment installed in 1949.
XVI.21	Belt Scale CM-BS3 to Belt Conveyor CM-BC1	2004	CTrStn	378,432	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC5	19,312	0.7300	0.4700	0.4700	lb/ton	138.13	88.93	88.93	Assumed this is the Clinker Value for the CM1-6 mills from 3/31/15 CP Spreadsheet. Equipment was installed in 2004.
XVI.22	CM-BC1 to CM-DR	1996	CTrStn	378,432	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC5	19,312	0.7300	0.4700	0.4700	lb/ton	138.13	88.93	88.93	This is all the material through mills CM1-CM6 (cliker + gypsum + Limestone); from 3/31/15 CP spreadsheet.
XVI.23	CM-DR to CM-BE4	1949	CTrStn	420,480	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM-DC5	19,312	0.7300	0.4700	0.4700	lb/ton	153.48	98.81	98.81	CM1 through CM-6 are all fed from 3 larger bins in center and DR-1
XVI.24	Bucket Elevator CM-BE4 to Drag Conveyor CM-DR2	1949	CTrStn	280,320	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM-DC5	19,312	0.7300	0.4700	0.4700	lb/ton	102.32	65.88	65.88	2/3 of the total materials from CMBS1, 2, and 3; Clinker, Gypsum and Limestone values from 3/31/15 CP Spreadsheet
XVI.25	Truck to Storage Silo CM-MA-BIN1	1970	CTrStn	1,925.0	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM-MA-DC1	1,000	0.7300	0.4700	0.4700	lb/ton	0.70	0.45	0.45	

Table F-2 Potential Pre-Control Device Emissions for CAM Analysis

Emission Source		Year Equipment Installed	Process Code	Annual Maximum Capacity / Process Rate	Units	Applicable Emission Limitations and Standards					Control Device	Approximate Dust Collector Flow Rate (dscfm)	Pre-Control Emission Factors				Pre-Control Emissions (ton/year)			Process Rate Information
						State Regulations or NSPS/NESHAP Regulations Proposed on or Before 11/15/1990		NSPS/NESHAP Regulations Proposed After 11/15/1990		Exempt from CAM?										
ID	Description					Emission Limitation/ Standard	Citation	Emission Limitation/ Standard	Citation				PM	PM_{10}	$PM_{2.5}$	Units	PM	PM_{10}	$PM_{2.5}$	
XVI.26	Truck to Storage Silo CM-MA-BIN2	1970	CTrStn	1,925.0	tons	PM ≤ 17.31$P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM-MA-DC1	1,000	0.7300	0.4700	0.4700	lb/ton	0.70	0.45	0.45	From 4/1/15 phone call with CP
XVI.27	Truck to Storage Silo CM-MA-BIN3	1970	CTrStn	4,520.0	tons	PM ≤ 17.31$P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM-MA-DC1	1,000	0.7300	0.4700	0.4700	lb/ton	1.65	1.06	1.06	
XVII. Finish Milling - D2 Area																				
XVII.1	Air Slide D2-AS1 to Pump D2-FP1	Unknown	CTrStn	591,300	tons	PM/PM_{10} ≤ 0.059 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector D2-DC4	1,517	0.7300	0.4700	0.4700	lb/ton	215.82	138.96	138.96	From Belt Conveyor D2-BC6, above. This dust collector is subject to an emission limit from the facility's Consent Decree.
XVII.2	Finish Mill D2-1-M	After August 1971	FMill	591,300	tons	PM/PM_{10} ≤ 0.502 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector D2-1-DC1	11,726	1.6000	0.6154	0.6154	lb/ton	473.04	181.93	181.93	From Belt Conveyor D2-BC6, above.
XVIII. Finish Milling - D3 Area																				
XVIII.1	Finish Mill D3-1	1974	FMill	946,080	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC1	16,371	1.6000	0.6154	0.6154	lb/ton	756.86	291.09	291.09	Assumed to be equal to the materials moved through Roll Presses 1 and 2, below.
XVIII.2	Air Slide D3-1-AS10 to Air Slide D3-1-AS11	Unknown	CTrStn	946,080	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC1	16,371	0.7300	0.4700	0.4700	lb/ton	345.32	222.33	222.33	Dust from Dust Collector D3-1-DC2; (Product Collector, functionally); equivalent to D3 Mill Production
XVIII.3	Air Slide D3-1-AS13 to Pneumatic Pump D3-1-FP1	1987	CTrStn	946,080	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC1	16,371	0.7300	0.4700	0.4700	lb/ton	345.32	222.33	222.33	Equal to AS11, Above.
XVIII.4	Roll Press D3-1-HRP1 and D3-1-HRP2 (Same Piece of Equipment)	1987	FMill	946,080	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC1	16,371	1.6000	0.6154	0.6154	lb/ton	756.86	291.09	291.09	
XVIII.5	Air Slide D3-1-AS11 to Air Slide D3-1-AS13	Unknown	CTrStn	946,080	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC1	16,371	0.7300	0.4700	0.4700	lb/ton	345.32	222.33	222.33	Same as D3-1-AS11, above;
XVIII.6	Air Slide D3-1-AS11 to Air Slide D3-1-AS12	1987	CTrStn	473,040	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC2	117,601	0.7300	0.4700	0.4700	lb/ton	172.66	111.16	111.16	All Material goes through the cooler from May to October; assume 1/2 of total D3 Mill Production goes through this cooler.
XVIII.7	Belt Scale D3-1-BS1 to Belt Conveyor D3-1-BC1	1987	CTrStn	851,472	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC3	11,777	0.7300	0.4700	0.4700	lb/ton	310.79	200.10	200.10	Assumed D3 mill gets the Kiln 4 clinker materials that don't go to the D2 mill.
XVIII.8	Belt Scale D3-1-BS2 to Belt Conveyor D3-1-BC1	1987	CTrStn	56,765	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC3	11,777	0.7300	0.4700	0.4700	lb/ton	20.72	13.34	13.34	From renewal application: Gypsum to other finish mills.
XVIII.9	Belt Conveyor D3-1-BC1 to Belt Conveyor D3-1-BC2	1992	CTrStn	908,237	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC3	11,777	0.7300	0.4700	0.4700	lb/ton	331.51	213.44	213.44	Sum of materials from D3-1-BS1 and D3-1-BS2, above.
XVIII.10	Belt Conveyor D3-1-BC2 to Bucket Elevator D3-1-BE1	1987	CTrStn	908,237	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC3	11,777	0.7300	0.4700	0.4700	lb/ton	331.51	213.44	213.44	Same as D3-1-BC2, above.
XVIII.11	Belt Conveyor D3-1-BC3 to Belt Conveyor D3-1-BC4	1992	CTrStn	946,080	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC3	11,777	0.7300	0.4700	0.4700	lb/ton	345.32	222.33	222.33	D3-1-BC2 plus limestone from D3-1-BC5, plus materials from D3-1-AS7, below.
XVIII.12	Belt Conveyor D3-1-BC4 to Roll Press D3-1-HRP	1987	CTrStn	946,080	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC3	11,777	0.7300	0.4700	0.4700	lb/ton	345.32	222.33	222.33	Same as D3-1-BC3, above
XVIII.13	Belt Conveyor D3-1-BC5 to Bucket Elevator D3-1-BE1	1987	CTrStn	37,843	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC3	11,777	0.7300	0.4700	0.4700	lb/ton	13.81	8.89	8.89	High-Lime rock from stockpile to D3 crusher; from 3/31/15 Spreadsheet from CP
XVIII.14	Bucket Elevator D3-1-BE1 to Belt Conveyor D3-1-BC3	1992	CTrStn	946,080	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC3	11,777	0.7300	0.4700	0.4700	lb/ton	345.32	222.33	222.33	Same as D3-1-BC3, above.
XVIII.15	Air Slide D3-1-AS7 to Air Slide D3-1-AS8	Unknown	CTrStn	946,080	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector D3-1-DC3	11,777	0.7300	0.4700	0.4700	lb/ton	345.32	222.33	222.33	This material is recirculated from the separator above (separator rejects at 120 TPH)
XIX. Product Storage and Bulk Loadout																				
XIX.1	Belt Conveyor BL-SC2 to Belt Conveyor BL-SC4	1959	CTrStn	1,184,930	tons	PM ≤ 17.31$P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector BL-DC1	2,560	0.7300	0.4700	0.4700	lb/ton	432.50	278.46	278.46	This value is based on actual maximum production values plus maximum theoretical cement imports to the plant.
XIX.2	Belt Conveyor BL-SC3 to Belt Conveyor BL-SC5	1959	CTrStn	1,184,930	tons	PM ≤ 17.31$P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector BL-DC2	2,283	0.7300	0.4700	0.4700	lb/ton	432.50	278.46	278.46	This value is based on actual maximum production values plus maximum theoretical cement imports to the plant.
XIX.3	Storage Bin BL-SB1 to Bucket Elevator BL-BE1	1960	CTrStn	1,184,930	tons	PM ≤ 17.31$P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector BL-DC3	2,793	0.7300	0.4700	0.4700	lb/ton	432.50	278.46	278.46	Assume the maximum amount here is equivalent to 1/2 of the total cement export value provided by CalPortland on the materials spreadsheet - this includes imported cement by rail.
XIX.4	Storage Bin BL-SB1 to Bucket Elevator BL-BE2	1960	CTrStn	1,184,930	tons	PM ≤ 17.31$P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector BL-DC4	3,281	0.7300	0.4700	0.4700	lb/ton	432.50	278.46	278.46	Assume the maximum amount here is equivalent to 1/2 of the total cement export value provided by CalPortland on the materials spreadsheet - this includes imported cement by rail.
XIX.5	Screw Conveyor BL-SB3-SC to Rail Car	Unknown	CTrStn	310,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector BL-DC5	3,519	0.7300	0.4700	0.4700	lb/ton	113.15	72.85	72.85	From CP Spreadsheet, 4/2/15

Table F-2 Potential Pre-Control Device Emissions for CAM Analysis

Emission Source		Year Equipment Installed	Process Code	Annual Maximum Capacity / Process Rate	Units	Applicable Emission Limitations and Standards					Control Device	Approximate Dust Collector Flow Rate (dscfm)	Pre-Control Emission Factors				Pre-Control Emissions (ton/year)			Process Rate Information
						State Regulations or NSPS/NESHAP Regulations Proposed on or Before 11/15/1990		NSPS/NESHAP Regulations Proposed After 11/15/1990		Exempt from CAM?										
ID	Description					Emission Limitation/ Standard	Citation	Emission Limitation/ Standard	Citation				PM	PM_{10}	$PM_{2.5}$	Units	PM	PM_{10}	$PM_{2.5}$	
XIX.6	Air Slide BL-AS2A to Truck	Unknown	CTrStn	545,965	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector BL-DC6	3,671	0.7300	0.4700	0.4700	lb/ton	199.28	128.30	128.30	Assume this is 1/2 the exports by truck provided by CalPortland on the materials spreadsheet (minus the amount that goes to storage bin BL-SB5, below)
XIX.7	Air Slide BL-AS2B to Truck	Unknown	CTrStn	545,965	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector BL-DC6	3,671	0.7300	0.4700	0.4700	lb/ton	199.28	128.30	128.30	Assume this is 1/2 the exports by truck provided by CalPortland on the materials spreadsheet (minus the amount that goes to storage bin BL-SB5, below)
XIX.8	Pneumatic Conveyor PH-FP1 to Storage Bin BL-SB4	1960	CTrStn	93,000	tons	$PM \leq 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector BL-DC7	2,849	0.7300	0.4700	0.4700	lb/ton	33.95	21.86	21.86	From CP Spreadsheet, 4/2/15
XIX.9	Bucket Elevator BL-BE3 to Storage Bin BL-SB5	1998	CTrStn	93,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector BL-SB5-DC1	3,000	0.7300	0.4700	0.4700	lb/ton	33.95	21.86	21.86	Mortar
XIX.10	Air Slide BL-SB5-AS2 to Truck	Unknown	CTrStn	55,800	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector BL-SB5-DC2	1,342	0.7300	0.4700	0.4700	lb/ton	20.37	13.11	13.11	60 % of mortar to truck
XIX.11	Air Slide BL-SB5-AS1 to Rail	Unknown	CTrStn	37,200	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector BL-SB5-DC3	1,342	0.7300	0.4700	0.4700	lb/ton	13.58	8.74	8.74	40 % of mortar to truck
XIX.12	Alleviator CM-A1 to Storage Bin CS-SB19	1972	CTrStn	146,102	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC8	3,733	0.7300	0.4700	0.4700	lb/ton	53.33	34.33	34.33	Total amount of material transferred to the bin
XIX.13	Alleviator CM-A2 to Storage Bin CS-SB14	1972	CTrStn	92,347	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC9	4,730	0.7300	0.4700	0.4700	lb/ton	33.71	21.70	21.70	Total amount of material transferred to the bin
XIX.14	Alleviator CM-A2 to Storage Bin CS-SB15	1972	CTrStn	146,102	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC9	4,730	0.7300	0.4700	0.4700	lb/ton	53.33	34.33	34.33	Total amount of material transferred to the bin
XIX.15	Alleviator CM-A2 to Storage Bin CS-SB17	1972	CTrStn	146,102	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC9	4,730	0.7300	0.4700	0.4700	lb/ton	53.33	34.33	34.33	Total amount of material transferred to the bin
XIX.16	Alleviator CM-A2 to Storage Bin CS-SB18	1972	CTrStn	146,102	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC9	4,730	0.7300	0.4700	0.4700	lb/ton	53.33	34.33	34.33	Total amount of material transferred to the bin
XIX.17	Alleviator CM-A3 to Storage Bin CS-SB4	1972	CTrStn	92,347	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC10	4,730	0.7300	0.4700	0.4700	lb/ton	33.71	21.70	21.70	Total amount of material transferred to the bin
XIX.18	Alleviator CM-A3 to Storage Bin CS-SB5	1972	CTrStn	92,347	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC10	4,730	0.7300	0.4700	0.4700	lb/ton	33.71	21.70	21.70	Total amount of material transferred to the bin
XIX.19	Alleviator CM-A3 to Storage Bin CS-SB11	1972	CTrStn	92,347	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC10	4,730	0.7300	0.4700	0.4700	lb/ton	33.71	21.70	21.70	Total amount of material transferred to the bin
XIX.20	Alleviator CM-A4 to Storage Bin CS-SB7	1972	CTrStn	11,087	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC11	3,276	0.7300	0.4700	0.4700	lb/ton	4.05	2.61	2.61	Total amount of material transferred to the bin - this is a mortar bin.
XIX.21	Alleviator CM-A4 to Storage Bin CS-SB8	1972	CTrStn	11,087	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC11	3,276	0.7300	0.4700	0.4700	lb/ton	4.05	2.61	2.61	Total amount of material transferred to the bin - this is a mortar bin.
XIX.22	Alleviator CM-A4 to Storage Bin CS-SB9	1972	CTrStn	11,087	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC11	3,276	0.7300	0.4700	0.4700	lb/ton	4.05	2.61	2.61	Total amount of material transferred to the bin - this is a mortar bin.
XIX.23	Alleviator CM-A4 to Storage Bin CS-SB10	1972	CTrStn	11,087	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC11	3,276	0.7300	0.4700	0.4700	lb/ton	4.05	2.61	2.61	Total amount of material transferred to the bin - this is a mortar bin.
XIX.24	Alleviator CM-A5 to Storage Bin CS-SB1	1972	CTrStn	33,217	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC12	4,730	0.7300	0.4700	0.4700	lb/ton	12.12	7.81	7.81	Total amount of material transferred to the bin
XIX.25	Alleviator CM-A5 to Storage Bin CS-SB2	1972	CTrStn	33,217	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC12	4,730	0.7300	0.4700	0.4700	lb/ton	12.12	7.81	7.81	Total amount of material transferred to the bin
XIX.26	Alleviator CM-A5 to Storage Bin CS-SB3	1972	CTrStn	33,217	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC12	4,730	0.7300	0.4700	0.4700	lb/ton	12.12	7.81	7.81	Total amount of material transferred to the bin
XIX.27	Alleviator CM-A3 to Storage Bin CS-SB6	1972	CTrStn	92,347	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC14	4,730	0.7300	0.4700	0.4700	lb/ton	33.71	21.70	21.70	Total amount of material transferred to the bin
XIX.28	Alleviator CM-A2 to Storage Bin CS-SB16	1972	CTrStn	146,102	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC14	4,730	0.7300	0.4700	0.4700	lb/ton	53.33	34.33	34.33	Total amount of material transferred to the bin
XIX.29	Alleviator CM-A3 to Storage Bin CS-SB12	1972	CTrStn	92,347	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC15	4,730	0.7300	0.4700	0.4700	lb/ton	33.71	21.70	21.70	Total amount of material transferred to the bin
XIX.30	Alleviator CM-A2 to Storage Bin CS-SB13	1972	CTrStn	146,102	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC15	4,730	0.7300	0.4700	0.4700	lb/ton	53.33	34.33	34.33	Total amount of material transferred to the bin
XIX.31	Alleviator CM-A1 to Storage Bin CS-SB21	1972	CTrStn	146,102	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC16	4,730	0.7300	0.4700	0.4700	lb/ton	53.33	34.33	34.33	Total amount of material transferred to the bin
XIX.32	Alleviator CM-A1 to Storage Bin CS-SB22	1972	CTrStn	146,102	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC16	4,730	0.7300	0.4700	0.4700	lb/ton	53.33	34.33	34.33	Total amount of material transferred to the bin

Table F-2 Potential Pre-Control Device Emissions for CAM Analysis

Emission Source		Year Equipment Installed	Process Code	Annual Maximum Capacity / Process Rate	Units	Applicable Emission Limitations and Standards					Control Device	Approximate Dust Collector Flow Rate (dscfm)	Pre-Control Emission Factors				Pre-Control Emissions (ton/year)			Process Rate Information
						State Regulations or NSPS/NESHAP Regulations Proposed on or Before 11/15/1990		NSPS/NESHAP Regulations Proposed After 11/15/1990		Exempt from CAM?										
ID	Description					Emission Limitation/ Standard	Citation	Emission Limitation/ Standard	Citation				PM	PM_{10}	$PM_{2.5}$	Units	PM	PM_{10}	$PM_{2.5}$	
XIX.33	Alleviator CM-A1 to Storage Bin CS-SB23	1972	CTrStn	146,102	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector CM-DC16	4,730	0.7300	0.4700	0.4700	lb/ton	53.33	34.33	34.33	Total amount of material transferred to the bin
XIX.34	Alleviator CM-A1 to Storage Bin CS-SB20	1972	CTrStn	146,102	tons	PM/PM_{10} ≤ 0.162 lb/hr Opacity ≤ 10%	Consent Decree NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector CM-DC17	3,897	0.7300	0.4700	0.4700	lb/ton	53.33	34.33	34.33	Total amount of material transferred to the bin
XX. Cement Packhouse																				
XX.1	Bucket Elevator PH-BE1 to Rotary Screen PH-RS1	1948	CTrStn	111,782	tons	$PM \le 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector PH-DC1	4,730	0.7300	0.4700	0.4700	lb/ton	40.80	26.27	26.27	Assume 5% of total cement exports go through packhouse (Per e-mail from Janelle on 4/1/15). 1/2 of that value goes therough PH-BE1.
XX.2	Rotary Screen PH-RS1 to Storage Bin PH-SB1	Unknown	CTrStn	111,782	tons	$PM \le 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector PH-DC1	4,730	0.7300	0.4700	0.4700	lb/ton	40.80	26.27	26.27	Same as Rotary Screen PH-RS1
XX.3	Cement Packer PH-PK3 to Bag	2003	CTrStn	111,782	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector PH-DC1	4,730	0.7300	0.4700	0.4700	lb/ton	40.80	26.27	26.27	Same as Storage Bin PH-SB1
XX.4	Spill Bin	Unknown	CTrStn	5,589	tons	$PM \le 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector PH-DC1	4,730	0.7300	0.4700	0.4700	lb/ton	2.04	1.31	1.31	Assumed 5% of bag value, above.
XX.5	Spill Bin to Screw Conveyor PH-SC2	Unknown	CTrStn	5,589	tons	$PM \le 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector PH-DC1	4,730	0.7300	0.4700	0.4700	lb/ton	2.04	1.31	1.31	This material is recirculated/reintroduced into the packhouse.
XX.6	Bucket Elevator PH-BE2 to Rotary Screen PH-RS2	1952	CTrStn	111,782	tons	$PM \le 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector PH-DC2	5,038	0.7300	0.4700	0.4700	lb/ton	40.80	26.27	26.27	Assume 10% of total cement exports go through packhouse. 1/2 of that value goes therough PH-BE2.
XX.7	Rotary Screen PH-RS2 to Storage Bin PH-SB2	Unknown	CTrStn	111,782	tons	$PM \le 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector PH-DC2	5,038	0.7300	0.4700	0.4700	lb/ton	40.80	26.27	26.27	Same as Rotary Screen PH-RS2
XX.8	Cement Packer PH-PK4 to Bag	1950	CTrStn	111,782	tons	$PM \le 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector PH-DC2	5,038	0.7300	0.4700	0.4700	lb/ton	40.80	26.27	26.27	Same as Storage Bin PH-SB2
XX.9	Spill Bin.	Unknown	CTrStn	111,782	tons	$PM \le 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector PH-DC2	5,038	0.7300	0.4700	0.4700	lb/ton	40.80	26.27	26.27	Same as Bag, above.
XX.10	Spill Bin to Screw Conveyor PH-SC4	Unknown	CTrStn	111,782	tons	$PM \le 17.31P^{0.16}$ lb/hr	AZ SIP R9-3-502.A.2	Opacity ≤ 10%	NESHAPS Subpart LLL	No	Dust Collector PH-DC2	5,038	0.7300	0.4700	0.4700	lb/ton	40.80	26.27	26.27	
XX.11	Mortar Import Bin to Screw Conveyor PH-SC8N	1985	CtrStn	93,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector PH-DC3	3,416	0.7300	0.4700	0.4700	lb/ton	33.95	21.86	21.86	This screw conveyor and the associated hopper process mortar materials.
XX.12	Screw Conveyor PH-SC9 to Packhouse Hopper	1985	CTrStn	93,000	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector PH-DC4	3,416	0.7300	0.4700	0.4700	lb/ton	33.95	21.86	21.86	This screw conveyor and the associated hopper process mortar materials.
XX.13	PH-P3-BC5 to Palletizer PH-PZ3	1975	CTrStn	17,179	tons	Opacity ≤ 10%	NSPS Subpart F	Opacity ≤ 10%	NESHAPS Subpart LLL	Yes	Dust Collector PH-DC5	6,300	0.7300	0.4700	0.4700	lb/ton	6.27	4.04	4.04	
XXI. Solid Fuel (Coal/Coke) System																				
XXI.1	Storage Bin H3-K4-WF1-SB or H3-K4-WF2-SB to Rotor Scale H3-K4-WF1 or H3-K4-WF2	Unknown	CoalTrStn	391,745	tons	$PM \le 5.39P^{0.62}$ lb/hr Opacity ≤ 20%	AZ SIP R9-3-516.A.2.a A.A.C. R18-2-702.B	--	--	No	Dust Collectors H3-K4-DC1 & H3-K4-DC2	20,300	0.1681	0.0210	0.0032	lb/ton	32.94	4.11	0.63	From Renewal Application - Coal to Plant Stockpile (Rail), Coke/Pet Coke to Plant Stockpile (Rail)

APPENDIX G. CAM PLAN

CALPORTLAND COMPANY – RILLITO CEMENT PLANT

I. CAM Plan Applicability

- PSEU controlled by Dust Collectors F2-DC1, F2-DC4, AC1-DC1, AC2-DC1, AC3-DC1, AC4-DC1, AC-BE2-DC, AC-DC1, F2-PS-DC1, F2-PS-DC2, F2-PS-DC3, F3-KS-DC1, H4-K1-DC, H4-K2-DC, H4-K3-DC, H2-DC2, C2-DC4, C2-DC11, C2-DC12, D2-DC1, D2-DC3, CM-DC5, D2-DC4, D2-1-DC1, BL-DC1, BL-DC2, BL-DC3, BL-DC4, BL-DC6, and PH-DC2.

II. Background

A. Control Technology

- Dust Collectors (various flow rates)

B. Emission Units/Pollutants Controlled

- See Tables 18.1 and H.2 for the controlled emission units for each dust collector.
- PM, PM_{10}, and $PM_{2.5}$ are controlled by the dust collectors.

C. Applicable Requirements

- See Table 3.3, Section 8, the various tables in Section 9, and Table H.2.

D. Emission Limitations/Standards

- See Table 3.3, Section 8, the various tables in Section 9, and Table H.2.

E. Total Potential Pre-Control Device Emissions for Associated PSEU

- See Tables 18.1 and H.2.

F. Potential to Emit for the Associated PSEU

- See Table 6.1

III. Monitoring Approach

A. Indicator

- Visible emissions

B. Indicator Range

- No visible emissions.

C. Excursion Determination

- Any opacity observed during the visible emission survey constitutes an excursion event.
- Any bags or seals in poor condition, or accumulation of dust in the baghouse compartment during annual inspection constitutes an excursion event.

APPENDIX H. 317 NOTIFICATIONS

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
1110 W. Washington St.
Phoenix, AZ 85007
602-771-2300
KATIE HOBBS
GOVERNOR
KAREN PETERS
DIRECTOR

8/19/26

VIA EMAIL

Mark Simmons
CalPortland Company
11115 Casa Grande Hwy
Rillito, AZ 85654

Subject: Facility Change without a Permit Revision No. 117565 to Permit No. 85424
Calportland - Rillito Cement Plant - Place ID: 2869

Dear Mr. Simmons:

The Arizona Department of Environmental Quality (ADEQ) received your letter on August 13, 2026 for the replacement of an existing coal mill bin (Equipment ID: H3-K4-CM-SB) with a new coal mill bin using the same Equipment ID to Operating Permit No. 85424. The new coal mill bin will be substantively similar, with a decreased capacity from 150 tons to 135 tons. ADEQ has determined that these changes meet the requirements of facility change without a permit revision under Arizona Administrative Code R18-2- 317.A.

You are advised that a permit is a legally enforceable document. If your facility fails to comply with the provisions contained in its permit, you will be subject to enforcement action and could incur civil fines and/or be subject to criminal penalties in accordance with Arizona Revised Statues §49-464.

If you have any questions, please contact Gavin Klockeman at 602-771-4406 or me at 602-370-7358.

Sincerely,

Signed by:
Tim Pippenger
709EB3B6DB8F4BF...
Tim Pippenger, Manager
Air Permits and Compliance Section
Air Quality Division

ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

Katie Hobbs
Governor

Karen Peters
Deputy Director

VIA EMAIL

January 13, 2025

Mark Simmons
Calportland Company
P.O. Box 338
Rillito, AZ 85654
msimmons@calportland.com

Subject: Facility Change without a Permit Revision No. 106876 to Operating Permit No. 85424
Calportland - Rillito Cement Plant - Place ID: 2869

Dear Mr. Simmons:

The Arizona Department of Environmental Quality (ADEQ) received your letter for the replacement of the kiln 4 baghouse (H5-GB) on December 27, 2024. The new unit meets the same level of emissions control with an outlet grain loading limit of 0.008 gr/dscf. ADEQ has determined that these changes meet the requirements of facility change without a permit revision under Arizona Administrative Code R18-2-317.A.

You are advised that a permit is a legally enforceable document. If your facility fails to comply with the provisions contained in its permit, you will be subject to enforcement action and could incur civil fines and/or be subject to criminal penalties in accordance with Arizona Revised Statutes § 49-464.

If you have any questions, please contact Vivek Rajaraman at (602) 771-4105 or me at (602) 771-2283.

Sincerely,

DocuSigned by:
Karla Murrieta
65849BC8BF8E4B7...

Karla Murrieta
Manager, Air Permits
Air Permits and Compliance

ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

Douglas A. Ducey
Governor

Misael Cabrera
Director

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mark Simmons
CalPortland Company
P.O. Box 338
Marana, AZ 85654

Subject: Facility Change without a Permit Revision No. 86524 to Permit No. 61522
Rillito Cement Plant - Place ID: 2869

Dear Mr. Simmons:

The Arizona Department of Environmental Quality received your letter on November 09, 2020 for the replacement of the H5-GB fan and housing and replacement of the 600 horsepower (hp) H2-GB baghouse fan motor with an 800 hp fan motor to Operating Permit No. 61522. The Department has determined that these changes meet the requirements of facility change without a permit revision under Arizona Administrative Code A.A.C. R18-2- 317.A.

You are advised that a permit is a legally enforceable document. If your facility fails to comply with the provisions contained in its permit, you will be subject to enforcement action and could incur civil fines and/or be subject to criminal penalties in accordance with A.R.S. §49-464.

If you have any questions, please contact Bill Lichtenberg at (602) 771-8703 or me at (602) 771-4420.

Sincerely,

Valerie Thorsen, Manager
Air Permits Unit
Facilities Emissions Control Value Stream

VT2: wl2

CC: Lisa Beckham, EPA Region IX

APPENDIX I. DUST CONTROL PLAN

Dust Control Plan
CalPortland Company – Rillito Cement Plant
Rillito, Arizona

Revised June 2026

Submitted to:

Arizona Department of Environmental Quality

1110 West Washington Street

Phoenix, Arizona 85007

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APPENDIX B: AP-42 SECTION 13 2.2, UNPAVED ROADS, NOVEMBER 2006

APPENDIX C: PAN EVAPORATION DATA

1. INTRODUCTION

CalPortland Company (CalPortland) currently operates a limestone quarry, a portland cement manufacturing plant, and the Twin Peaks Rock and Stone Aggregate Plant (collectively called the Rillito facility) in Rillito, Arizona in accordance with Class I Air Quality Permit #85424 (as revised by minor permit revision No. 113625), issued by the Arizona Department of Environmental Quality (ADEQ) on April 9, 2026. Permit condition I.B.1.e.1 of Attachment "B" requires that the facility operate in accordance with an approved Dust Control Plan (DCP) that addresses the facility's unpaved road systems. Permit Condition II.C.4 of Attachment "C" requires that the facility operate in accordance with a submitted DCP that addresses fugitive coal dust emissions from the open coal storage piles. Section 2 describes the dust control measures for the unpaved road systems and open coal storage piles. The recordkeeping requirements that will be used to demonstrate compliance with the DCP are presented in Section 4. This revision to the facility's DCP is being submitted to reflect the proposed changes in the facility's unpaved road systems included in the permit renewal and Significant Permit Revision (SPR) application submitted to ADEQ in August 2025 and last amended in April 2026.

2. UNPAVED ROAD SYSTEMS

2.1 Description of Unpaved Road Systems

The Rillito unpaved road system can be segregated into four distinct road systems, each of which has different use characteristics and could be subject to a different dust control program. The four road systems are:

1. The Cement Plant Unpaved Road System comprised of all unpaved roads within the Rillito cement plant that support cement operations. This road system terminates at the point where the road leading to the quarry crosses the canal at the cement plant;

2. The Plant/Quarry Road System comprised of the unpaved sections of the road from the cement plant (starting at the canal crossing) to the quarry office gate; and

3. The Quarry Road System comprised of all regularly used unpaved roads beyond the quarry office gate.

4. Aggregate Operations Unpaved Road System, which is comprised of the unpaved road segments supporting the existing Twin Peaks Rock and Stone Aggregate and the Cotton Field Primary and Overland Plants, as well as the proposed Manufactured Fines Plant, Wash Plant, and central mix concrete batch plant (CBP).

With this revision of the DCP, CalPortland is not proposing to update the methodologies associated with existing dust control programs for cement operations unpaved road vehicle traffic (i.e., road systems 1 – 3). CalPortland proposes to add road system 4, representing unpaved road vehicle traffic for aggregate operations, to the DCP alongside the new associated dust control programs.

2.2 Unpaved Road Systems Dust Control Programs

Dust control programs designed to achieve a minimum of 65% particulate control efficiency for road systems 1 – 3 and a minimum of 74% particulate control efficiency for road system 4 will be implemented. Because each unpaved road system has different use characteristics, the dust control program may differ for each road system. The dust control program for each road system will include the following:

1. Barring access (by the use of gates, berms, steel cable, or other physical barriers) to all road sections which will not be controlled.

2. For road systems 1 – 3, implementing one of two dust control programs, each of which is capable of achieving a minimum 65% control of emissions of particulate matter (PM), particulate matter less than or equal to 10 microns nominal aerodynamic diameter (PM_{10}), and particulate matter less than or equal to 2.5 microns nominal aerodynamic diameter ($PM_{2.5}$). Each dust control program will include periodic reapplication of dust suppressant in order to control loose surface material that is entrained onto the road or is produced from the abrasion of the vehicles on the treated road surface (See Section 3.2.3.2.2 of Fugitive Dust Background Document and Technical Information Document for Best Available

Control Measures, EPA-450/2-92-004, in Appendix A). The reapplication frequency will be every two weeks. The reapplication strength of the dust suppressant will correspond to: (a) the manufacturer's recommendation if available, or (b) the amount necessary to completely replenish the initial ground inventory annually for Dust Control Program A and every six months for Dust Control Program B if there are no manufacturer's recommendations.

Dust Control Program A - Application of sufficient chemical dust suppressants to achieve a ground inventory of 0.14 gallons (gal)/square yard (yd^2); or

Dust Control Program B - Application of sufficient petroleum-based, adhesive-based, or magnesium chloride-based dust suppressants to achieve a ground inventory of 0.05 gal/yd^2 and periodic watering to achieve average daily water application intensities of 0.4, 0.16 and 0.64 gal/yd^2 for the Plant Road System, the Plant/Quarry Road System and the Quarry Road System, respectively when such systems are being used for cement plant operations (Note: watering when a road system is not being used, such as at night or weekends at the Plant/Quarry Road System will not be performed as this is unnecessary).

3. For road system 4, implementing one of two dust control programs, each of which is capable of achieving a minimum 85% control of PM, PM_{10}, and $PM_{2.5}$ emissions.

Dust Control Program C – Periodic watering in combination with a limitation to vehicle speed of 25 mph to achieve a combined control efficiency of 85%. The vehicle speed limitation will achieve a 44% control efficiency, as documented by the Western Regional Air Partnership's (WRAP) Fugitive Dust Handbook (September 7, 2006) [1], while the remainder of the control efficiency required to achieve 85% total control efficiency will result from sufficient watering of road system 4 using the procedures described in Section 2.3.3. The 74% particulate control efficiency from watering is also determined to be achievable in the WRAP Fugitive Dust Handbook.

Dust Control Program D – Periodic application of sufficient petroleum-based, adhesive-based, or magnesium chloride-based chemical dust suppressants in combination with daily watering to achieve a combined control efficiency of 85%. CalPortland would conduct bi-weekly or equivalent dust suppressant application to achieve a 0.1 gal/yd^2 ground inventory per Figure 13.2.2-5 in U.S. EPA AP-42 Section 13.3.2. Relevant sections from this document are provided in Appendix B. The remainder of the control efficiency required to achieve 85% total control efficiency will result from sufficient watering of road system 4 using the procedures described in Section 2.3. For this dust control program, the reapplication strength of the dust suppressant will correspond to: (a) the manufacturer's recommendation if available, or (b) the amount necessary to completely replenish the initial ground inventory every six months if there are no manufacturer's recommendations.

[1] Accessed at https://www.env.nm.gov/wp-content/uploads/sites/2/2017/02/WRAP_FDHandbook_Rev_06.pdf.

4. Watering and chemical stabilization of access points where unpaved traffic surfaces adjoin paved roads.

2.3 Demonstration that the Dust Control Programs Will Provide the Specified Control Efficiency

2.3.1 Unpaved Road Systems 1 - 3 Dust Control Program A

The sufficiency of Dust Control Program A to achieve a minimum of 65% for PM, PM_{10}, and $PM_{2.5}$ is verified by considering Figure 13.2.2-5 in U.S. EPA AP-42 Section 13.3.2. At a ground inventory of 0.14 gallons/yd^2 that is replenished for losses every two weeks, this figure shows control efficiencies of 65% for PM and 88% for PM_{10} (assumed to be equal to $PM_{2.5}$). This applies to the cement unpaved roads only.

2.3.2 Unpaved Road Systems 1 – 3 Dust Control Program B

The sufficiency of Dust Control Program B to achieve a minimum control efficiency of 65% for PM, PM_{10}, and $PM_{2.5}$ is verified by considering Figure 13.2.2-5 in U.S. EPA AP-42 Section 13.3.2. At a ground inventory of 0.05 gallons/yd^2 that is replenished for losses every two weeks, this figure shows control efficiencies of 68% for PM_{10} and 46% for PM.

The additional particulate control necessary to maintain the PM control efficiency at 65% or greater will result from the periodic watering which constitutes part of Dust Control Program B. The minimum control efficiency of the watering program, W_c, necessary to achieve a combined dust suppressant/watering control efficiency of 65% is 35% (46% from chemical dust suppressants and 19% from water). This is determined from the expression (100-46) (W_c) = 19.

The average application intensity of water necessary to achieve a 35% control efficiency is determined from the equation:

The following equations were derived from this model:

$$L = \frac{0.8 \times p \times d \times t}{(100 - C)}$$

Where:
i = application intensity (liters/m^2·hr);

d = average hourly daytime traffic (vehicles/hr; see Table below);

t = time between applications (hours);

W_c = average particulate control efficiency (%, 35 in this case);

p = calculated potential average hourly daytime evaporation rate (0.515 millimeters/hour; See Figure 2 (Mean Annual Class A Pan Evaporation) in Appendix C of this document).

A summary of the average daily vehicle traffic rate (annual average), the hourly vehicle rate and the average daily application intensity necessary to achieve 35% particulate control for each of the road systems is presented in Table 2.1. The average application intensities are 0.4, 0.16, and 0.64

gallons/yd^2 for the Plant Road System, the Plant/Quarry Road System and the Quarry Road System, respectively. A demonstration that these application intensities will produce a 35% control efficiency can be made by substituting appropriate values for L, P, d, and t into the expression for L and solving for C.

The average daily application rate does not include days when natural precipitation equals or exceeds 0.01 inches, as watering during such days is unnecessary. The application intensities should be treated as annual averages as some days will require a greater water application whereas others will require a lesser water application. The equation for L above predicts the same control efficiency independent of whether the water is applied during one pass per day of the water truck, or during multiple passes per day. The best results will occur if the application is spread over multiple applications per day.

Table 2.1 Summary of Vehicle Traffic Rates and the Average Water Application Rates Necessary to Achieve a 35% Control Efficiency of Unpaved Roads

	Plant Road System - 7 Days/Week	Plant/Quarry Road System - 5 Days/Week	Quarry Road System - 5 Days/Week
Average Daily vehicle Traffic Rate (vehicle passes/day)	286 [a]	115 [c]	457[b]
Hourly Vehicle Rate (assuming all traffic occurs over a 12-hour period)	23.8	9.6	38.1
Average Daily Water Application Rate (gallons/yard^2)	0.40	0.16	0.64
Average Daily Water Application Rate (l/m^2)	1.81	0.73	2.89

[a] "Traffic count measurements at Rillito" Appendix C of the RIMOD III Application.

[b] The travel frequency is based upon the travel characteristics of the road which will emit the maximum emissions; i.e. the road from the quarry area to the waste rock storage area at the maximum annual waste rock production rate. The average daily vehicle traffic rate is based upon the following round trips (See Appendix D of the RIMOD III Application for vehicle parameters): (a) haul trucks (84,598 VMT/1.6 miles), (b) half the water truck traffic ((4390 VMT + 11378 VMT) / (2.1 miles + 1.6 miles) assuming the VMT are spent on the waste rock and kiln grade rock hauls), (c) half the pickup traffic ((4600 VMT + 7500 VMT + 6300 VMT) / 2.1 miles) and (d) half the miscellaneous vehicle traffic (100 VMT / 2.1 miles).

[c] The travel frequency of the road section from the canal crossing at the cement plant and twin peaks road (This equals the Phase I traffic projection in Table C.2.2 of the RIMOD III application plus the traffic necessary to transport raw feed additives, cement kiln clinker dust and recycle clinker to the quarry during Phase I from Table D.8 of the RIMOD III Application).

2.3.3 Unpaved Road System 4 Dust Control Program C

The particulate control necessary to maintain the PM_{10} and PM control efficiency at 85% or greater will result from periodic watering in combination with a limitation to vehicle speed of 25 mph. The vehicle speed limitation will achieve a 44% control efficiency, as documented by page 3 of the WRAP Fugitive Dust Handbook . Periodic application of water to unpaved roads can achieve a control efficiency of 74% or higher to achieve the necessary combined control efficiency of 85%.

The water application intensity during aggregate process operational hours (i.e., 12 hours per day, 7 days a week, 52 weeks a year) required to achieve a 74% control efficiency for each unpaved road segment is calculated using an empirical model developed by EPA (Control of Open Fugitive Sources, EPA-U50/3-88-008, September, 1988). The following equations were derived from this model:

$$L = \frac{0.8 \times p \times d \times t}{(100 - C)}$$

$$p = 0.0049 \times PER$$

Where:

L = application intensity (liters/m^2·hr);

d = average hourly daytime traffic (vehicles/hr; see Table below);

t = time between applications (hours, 2 conservatively used in this case);

C = average particulate control efficiency (%, 74 in this case);

PER = mean annual pan evaporation rate (inches/year, 111.07 used per the Western Regional Climate Center for the MET Tower for Tucson U Of Ariz # 1 station, determined to be most representative).

p = calculated potential average hourly daytime evaporation rate (mm/hr, 0.0049 * 111.07 = 0.544 mm/hr).

The application intensity required to achieve a 74% control efficiency from watering is calculated using the first equation, based on water application to the road system 4 segments every 2 hours. A summary of the average hourly vehicle traffic rate (based on annual average mileage traveled) and the hourly application intensity necessary to achieve 74% particulate control is presented for each of the road segments in Table 2.2. CalPortland may reduce the frequency of application by increasing the application intensity. Additionally, the average hourly application rate does not include days when natural precipitation equals or exceeds 0.01 inches, as watering during such days is unnecessary. The application intensity should be treated as an hourly average as some days will require a greater water application whereas others will require a lesser water application. The equation for L above predicts the same control efficiency independent of whether the water is applied during one pass per day of the water truck, or during multiple passes per day. The best results will occur if the application is spread over multiple applications per day.

Table 2.2 Summary of Vehicle Traffic Rates and the Average Water Application Rates Necessary to Achieve a 74% Control Efficiency on Road System 4 Segments

Roadway Segment Description	Variables				Average Hourly Water Application Intensity (L)	
	W_c (%)	p (mm/h)	d (vehicle/hr)	t (hrs)	L/m^2*hr	Gal/yd^2*hr
Loader Transfer from Aggregate Plant Feed Stockpile to Hopper 1	74	0.544	34.00	2.00	1.14	0.25
Loader Transfer from Aggregate Plant Finished Stockpiles to Customer Trucks	74	0.544	42.00	2.00	1.41	0.31
Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant - Segment 2	74	0.544	40.00	2.00	1.34	0.30
Loader Travel from Equipment Parking to Pit	74	0.544	1.00	2.00	0.03	0.01
Loader Transfer from Cotton Field Pit Face to Grizzly F-2	74	0.544	34.00	2.00	1.14	0.25
Loader Transfer from MA Fines Plant Feed to Hopper 4	74	0.544	13.00	2.00	0.44	0.10
Loader Transfer from Feed Piles to Hopper 5	74	0.544	3.00	2.00	0.10	0.02
Loader from Wash Plant Stockpiles to Customer Trucks	74	0.544	34.00	2.00	1.14	0.25
Loader from Wash Plant Stockpiles to Secondary Stockpiles	74	0.544	17.00	2.00	0.57	0.13
Loader to and from Concrete Batch Plant Parking Area	74	0.544	1.00	2.00	0.03	0.01
Loader Transfer from Feed Piles to Aggregate Hoppers	74	0.544	16.00	2.00	0.54	0.12

2.3.4 Unpaved Road System 4 Dust Control Program D

The sufficiency of Dust Control Program D to achieve a minimum combined control efficiency of 85% for PM, PM_{10}, and $PM_{2.5}$ is verified by considering Figure 13.2.2-5 in U.S. EPA AP-42 Section 13.3.2. At a ground inventory of 0.1 gallons/yd^2 that is replenished for losses every two weeks, this figure shows control efficiencies of 75% for PM_{10} and 58% for PM.

The additional particulate control necessary to maintain the PM control efficiency at 85% or greater will result from the periodic watering which constitutes part of Dust Control Program D. The minimum control efficiency of the watering program, W_c, necessary to achieve a combined dust suppressant/watering control efficiency of 85% is 64%.

The average application intensity of water necessary to achieve a 64% control efficiency is determined from the equation:

The following equations were derived from this model:

$$L = \frac{0.8 \times p \times d \times t}{(100 - C)}$$

$$p = 0.0049 \times PER$$

Where:

L = application intensity (liters/m^2·hr);

d = average hourly daytime traffic (vehicles/hr; see Table below);

t = time between applications (hours, 2 conservatively used in this case);

C = average particulate control efficiency (%, 64 in this case);

PER = mean annual pan evaporation rate (inches/year, 111.07 used per the Western Regional Climate Center for the MET Tower for Tucson U Of Ariz # 1 station, determined to be most representative).

p = calculated potential average hourly daytime evaporation rate (mm/hr, 0.0049 * 111.07 = 0.544 mm/hr).

The application intensity required to achieve a 64% control efficiency from watering is calculated using the first equation, based on water application to the road system 4 segments every 2 hours. A summary of the average hourly vehicle traffic rate (based on annual average mileage traveled) and the hourly application intensity necessary to achieve 64% particulate control is presented for each of the road segments in Table 2.3. CalPortland may reduce the frequency of application by increasing the application intensity. Additionally, the average hourly application rate does not include days when natural precipitation equals or exceeds 0.01 inches, as watering during such days is unnecessary. The application intensity should be treated as an hourly average as some days will require a greater water application whereas others will require a lesser water application. The equation for L above predicts the same control efficiency independent of whether the water is applied during one pass per day of the water truck, or during multiple passes per day. The best results will occur if the application is spread over multiple applications per day.

Table 2.3 Summary of Vehicle Traffic Rates and the Average Water Application Rates Necessary to Achieve a 64% Control Efficiency on Road System 4 Segments

Roadway Segment Description	Variables				Average Hourly Water Application Intensity (L)	
	W_c (%)	p (mm/h)	d (vehicle/hr)	t (hrs)	L/m^2*hr	Gal/yd^2*hr
Loader Transfer from Aggregate Plant Feed Stockpile to Hopper 1	64	0.544	34.00	2.00	0.82	0.18
Loader Transfer from Aggregate Plant Finished Stockpiles to Customer Trucks	64	0.544	42.00	2.00	1.02	0.22
Customer Truck Travel to and from the Twin Peaks Rock and Stone Aggregate Plant - Segment 2	64	0.544	40.00	2.00	0.97	0.21
Loader Travel from Equipment Parking to Pit	64	0.544	1.00	2.00	0.02	0.01
Loader Transfer from Cotton Field Pit Face to Grizzly F-2	64	0.544	34.00	2.00	0.82	0.18
Loader Transfer from MA Fines Plant Feed to Hopper 4	64	0.544	13.00	2.00	0.31	0.07
Loader Transfer from Feed Piles to Hopper 5	64	0.544	3.00	2.00	0.07	0.02
Loader from Wash Plant Stockpiles to Customer Trucks	64	0.544	34.00	2.00	0.82	0.18
Loader from Wash Plant Stockpiles to Secondary Stockpiles	64	0.544	17.00	2.00	0.41	0.09
Loader to and from Concrete Batch Plant Parking Area	64	0.544	1.00	2.00	0.02	0.01
Loader Transfer from Feed Piles to Aggregate Hoppers	64	0.544	16.00	2.00	0.39	0.09

3. OPEN COAL STORAGE PILES

3.1 Description of Open Coal Storage Piles

Coal is delivered to CalPortland by rail cars and unloaded to an underground bin. It is transferred by belt conveyors to a stacker conveyor system and to the open coal storage piles.

Coal is reclaimed from the open coal storage piles by front-end loaders. Reclaimed coal is unloaded into two vibrating feed hoppers and transferred by belt conveyor into a hopper and by feeder screw to a belt scale that discharges to a belt conveyor. The coal storage silo discharges to the same belt conveyor via three vibrating feeders. Material passes through an impact crusher and an additional belt conveyor and screw conveyor prior to being deposited in one of four storage bins.

Coal from the storage bins is transported by four weigh belt feeders to four coal mills to be pulverized. Pulverized coal from the Kiln 4 coal mill also passes through a separator. Pulverized coal is separated from the airstream using four cyclones with the coal being directed to the kilns for its fuel source. The process also includes various enclosed screw conveyor devices.

3.2 Open Coal Storage Piles Dust Control Program

Condition III.C.4.c of Attachment “C” of Class I Air Quality Permit #85424 and 40 CFR 60.254(c) requires preparation and operation in accordance with a DCP to minimize fugitive coal dust emissions from each open coal storage pile. The DCP is required to contain one or more of six control measures specified in the condition and rule citation noted above that are most appropriate for site conditions. CalPortland has selected compaction as the most appropriate control measure for site conditions. The piles are compacted and flattened as they are built using haul trucks and front-end loaders. The remaining control measures are either too restrictive to movement around the open coal storage piles or can create a fire hazard.

In addition to the control measure selected above, CalPortland will implement the following additional measures:

1. Locate the open coal storage piles 25 feet or more from the property line,

2. Limit the height of the open coal storage piles to less than 45 feet, and

3. Cease loading, unloading, and tuning operations when sustained wind speeds are above 25 mph.

4. RECORDKEEPING

The following records will be maintained at the facility.

- Purchasing records for chemical dust suppressant.
- Daily water truck records.
- Employee training records.
- Monthly watering records and chemical application records.
- Manufacturers' specifications for chemical dust suppressants.

5. MODIFICATIONS TO THE DCP

The DCP will be revised as needed to reflect any changing conditions at the source. Modifications to this DCP will be made by the submittal of proposed revisions to ADEQ. All revisions will include a demonstration that the revised DCP for the unpaved road systems will achieve the minimum control efficiency represented in emission calculations for particulate pollutants. Implementation of revisions to the DCP will be made only after written approval by the ADEQ.

APPENDIX A

PB93-122273

United States
Environmental Protection
Agency

Office of Air Quality
Planning and Standards
Research Triangle Park, NC 27711

EPA-450/2-92-004
September 1992

Air

EPA

FUGITIVE DUST BACKGROUND DOCUMENT AND TECHNICAL INFORMATION DOCUMENT FOR BEST AVAILABLE CONTROL MEASURES

...distributed as another membership service by the American Mining Congress



3.1.2.2 Water Flushing of Roads--

Street flushers remove surface materials from roads and parking lots using high pressure water sprays. Some systems supplement the cleaning with broom sweeping after flushing. Unlike the two sweeping methods, flushing faces some obvious drawbacks in terms of water usage, potential water pollution, and the frequent need to return to the water source. However, flushing generally tends to be more effective in controlling particulate emissions.

Equations to estimate instantaneous control efficiency values are given in Table 3-1. Note that water flushing and flushing followed by broom sweeping represent the two most effective control methods (on the basis of field emission measurements) given in that table.

In the case of winter sanding, dust generation potential can be reduced if the fine materials left on roadways after pavement drying are cleaned up promptly and without further spreading and resuspension. Prompt cleaning also keeps abrasives from being ground into small particles by road traffic or freeze/thawing. Quick cleanup may not be mandated, however, if a new snowstorm is likely. Cleanup using combination water flushing/broom sweeping is recommended as soon as possible after a storm when above-freezing temperatures keep the flushing water from freezing on the roadway. If the road is already wet, flushing may not be required.

3.2 UNPAVED ROADS

There are numerous control options for unpaved travel surfaces, as shown in Table 3-5. Note that the controls fall into the three general categories of source extent reductions, surface improvements, and surface treatment. Each of these is discussed in greater detail in the following sections.

TABLE 3-5. CONTROL TECHNIQUES FOR UNPAVED TRAVEL SURFACES[a]

Source extent reduction:	Speed reduction
	Traffic reduction
Source improvement:	Paving
	Gravel surface
Surface treatment:	Watering
	Chemical stabilization

[a] Table entries reflect EPA draft guidance on urban fugitive dust control.

3.2.1 Source Extent Reductions

These controls either limit the amount of traffic on a road to reduce the PM-10 emission rate or lower speeds to reduce the emission factor value given by Equation (2-6). Examples could include ride share programs, restriction of roads to certain vehicle types, or strict enforcement of speed limits. In any instance, the control afforded by these measures is readily obtained by the application of the equation.

3.2.2 Surface Improvements

These controls alter the road surface. Unlike surface treatments (discussed below), these improvements are largely "one-shot" control methods; that is, periodic retreatments are not normally required.

The most obvious surface improvement is, of course, paving an unpaved road. This option is expensive and is probably most applicable to high volume (more than a few hundred passes per day) public roads and industrial plant roads that are not subject to very heavy vehicles (e.g., slag pot carriers, haul trucks, etc.) or spillage of material in transport. Control efficiency estimates can be obtained by applying the information of Section 3-1.

Other improvement methods cover the road surface material with another material of lower silt content (e.g., covering a dirt road with gravel or slag, or using a "road carpet" under ballast). Because Equation (2-6) shows a linear relationship between the emission factor and the silt content of the road surface, any reduction in the silt value is accompanied by an equivalent reduction in emissions. This type of improvement is initially much less expensive than paving; however, maintenance (such as grading and spot reapplication of the cover material) may be required.

Finally, vegetative cover has been proposed as a surface improvement for very low traffic volume roads (i.e., access roads to agricultural fields). Even though vehicle related emissions from such a road would be quite low, this method will also reduce wind erosion of the road surface.

3.2.3 Surface Treatments

Surface treatment refers to those control techniques which require periodic reapplications. Treatments fall into the two main categories of (1) wet suppression (i.e., watering, possibly with surfactants or other additives), which keeps the surface wet to control emissions, and (2) chemical stabilization, which attempts to change the physical (and, hence, the emissions) characteristics of the roadway. Necessary reapplication frequencies may range from several minutes for plain water under hot, summertime conditions to several weeks (or months) for chemicals.

Water is usually applied to unpaved roads using a truck with a gravity or pressure feed. This is only a temporary measure, and periodic reapplications are necessary to achieve any substantial level of control efficiency. Some increase in overall control efficiency is afforded by wetting agents which reduce surface tension.

Chemical dust suppressants, on the other hand, have much less frequent reapplication requirements. These suppressants are designed to alter the roadway, such as cementing loose material into a fairly impervious surface (thus simulating a paved surface) or forming a surface which attracts and retains moisture (thus simulating wet suppression).

Chemical dust suppressants are generally applied to the road surface as a water solution of the agent. The degree of control achieved is a direct function of the application intensity (volume of solution per area), dilution ratio, and frequency

(number of applications per unit time) of the chemical applied to the surface and also depends on the type and number of vehicles using the road.

3.2.3.1 Watering--

The control efficiency of unpaved road watering depends upon: (a) the amount of water applied per unit area of road surface, (b) the time between reapplications, (c) traffic volume during that period, and (d) prevailing meteorological conditions during the period. All of these factors affect the road surface moisture content. The control efficiency relationship shown in Figure 3-1 is buried in field tests conducted at a coal-fired power plant. Surface moisture grab samples over the daily watering cycle along with the daily traffic flow cycle are needed to determine an average control efficiency using this figure. The low control efficiency for watering of unpaved roads and the need for frequent (almost daily) reapplication preclude the use of watering as possible BACM.

3.2.3.2 Chemical Treatments--

As noted, some chemicals (most notably salts) simulate wet suppression by attracting and retaining moisture on the road surface. These methods are often supplemented by some watering. It is recommended that control efficiency estimates be obtained using Figure 3-1 and enforcement be based on grab sample moisture contents.

The more common chemical dust suppressants form a hard cemented surface. It is this type of suppressant that is considered below.

Besides water, petroleum resins (such as Coherex®) have historically been the products most widely used in industry. However, considerable interest has been shown at both the plant and corporate level in alternative chemical dust suppressants. As a result of this continued interest, several new dust

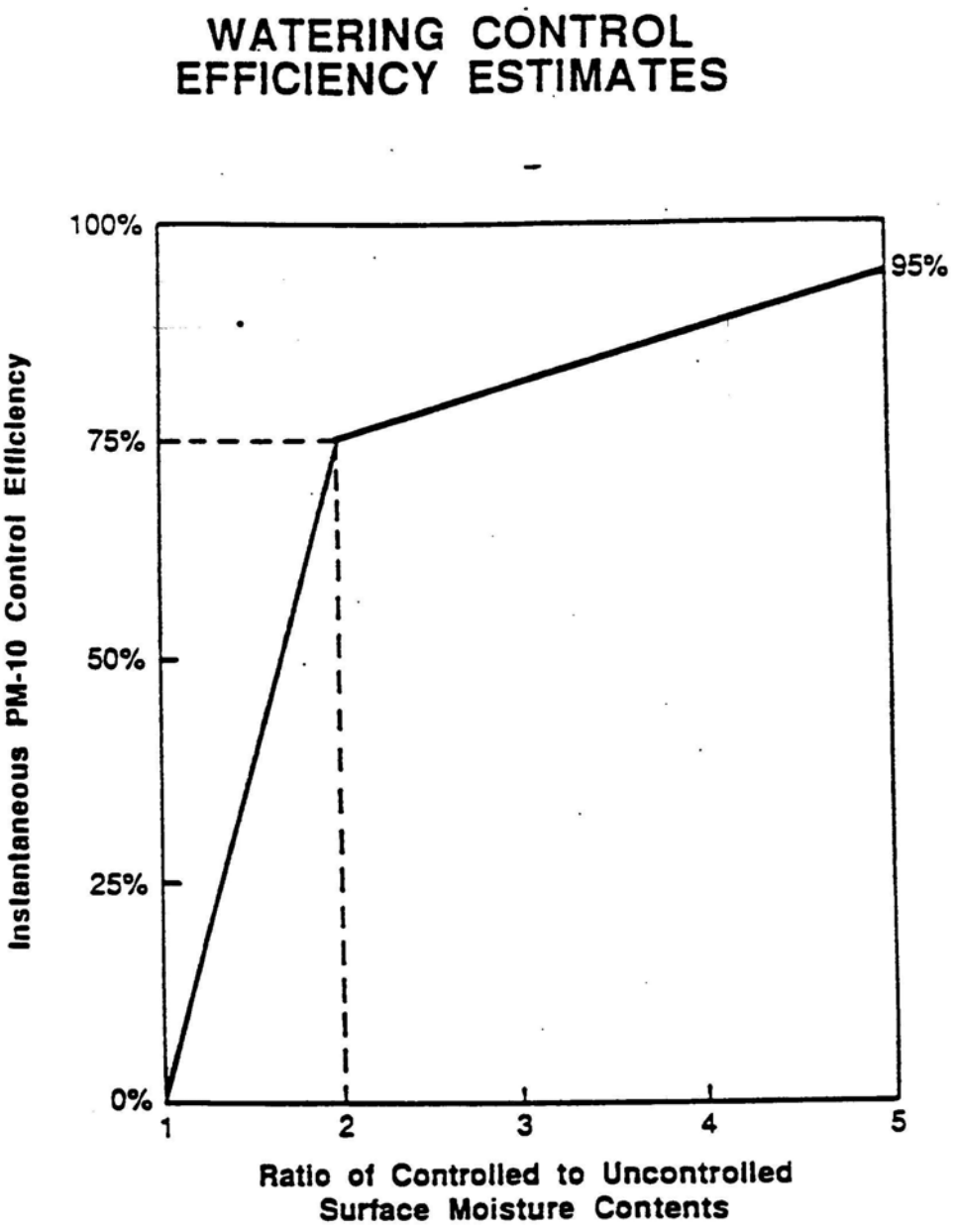


Figure 3-1. Watering Control Effectiveness for Unpaved Travel Surfaces.

suppressants have been introduced. These have included asphalt emulsions, acrylics, and adhesives. In addition, the generic petroleum resin formulations developed at the Mellon Institute with funding from the American Iron and Steel Institute (AISI) have gained considerable attention. These generic suppressants were designed to be produced on-site at iron and steel plants. On-site production of this type of suppressant in quantities commonly used in iron and steel plants has been estimated to reduce chemical costs by approximately 50 percent (Russell and Caruso, 1984).

In an earlier test report, average performance curves were generated for four chemical dust suppressants: (a) a commercially available petroleum resin, (b) a generic petroleum resin for on-site production at an industrial facility, (c) an acrylic cement, and (d) an asphalt emulsion (Muleski and Cowherd, 1987). (Note that at the time of the testing program, these suppressant types accounted for the majority of the market share in the iron and steel industry.) The results of this program were combined with other test results to develop a model to estimate time-averaged PM-10 control performance. This model is illustrated in Figure 3-2. Several items are to be noted:

- The term "ground inventory" is a measure of residual effects from previous applications. Ground inventory is found by adding together the total volume (per unit area) of concentrate (not solution) since the start of the dust control season. An example is provided below.
- Note that no credit for control is assigned until the ground inventory exceeds 0.05 gal/yd^2.
- Because suppressants must be periodically reapplied to unpaved roads, use of the time-average values given in the figure are appropriate. Recommended minimum reapplication frequencies (as well as alternatives) are discussed later in this section.

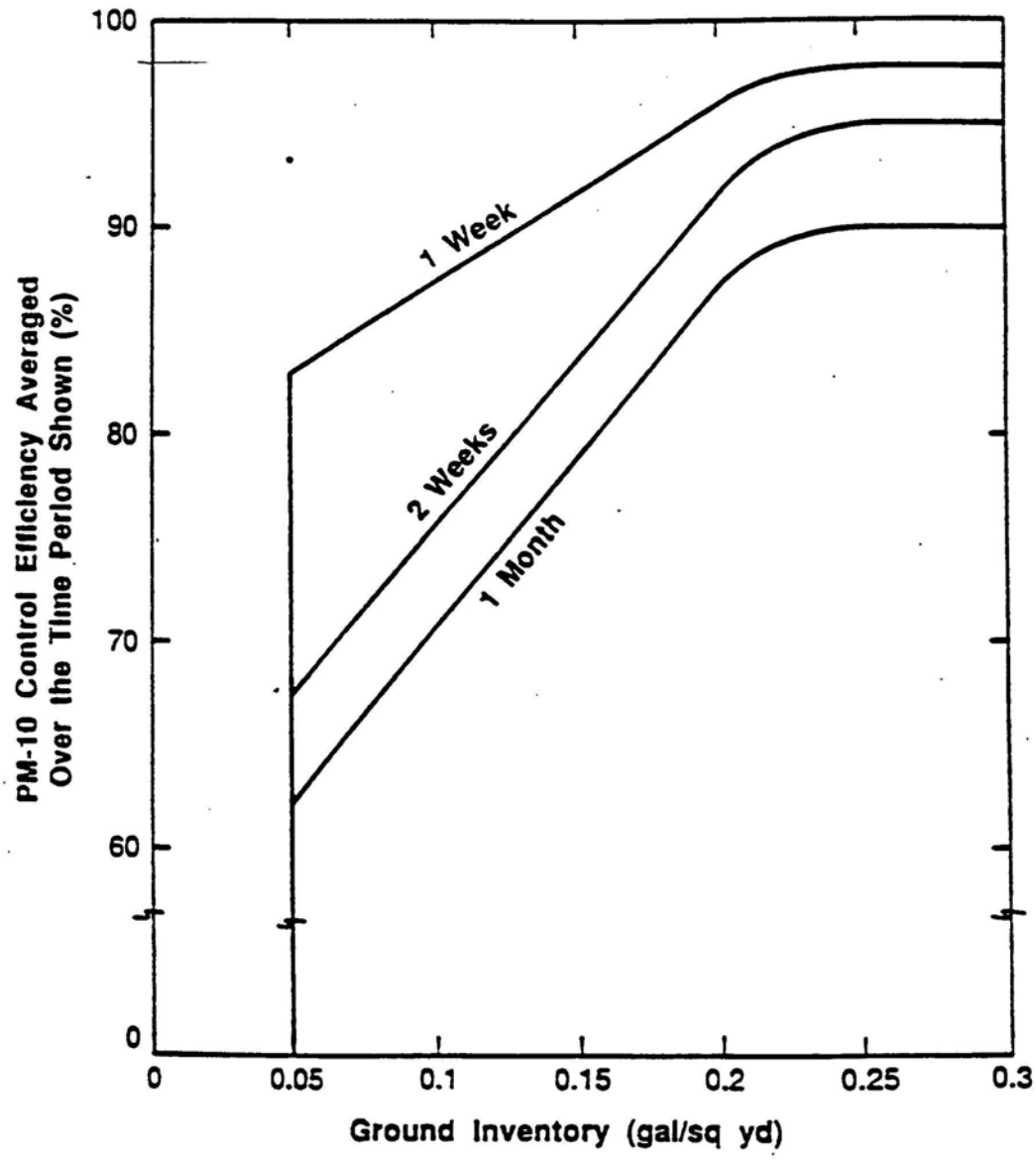


Figure 3-2. Average PM10 control efficiency for chemical suppressants.

- Figure 3-2 represents an average of the four suppressants given above. The basis of the methodology lies in a similar model for petroleum resins only (Muleski and Cowherd, 1987). However, agreement between the control efficiency estimates given by Figure 3-2 and available field measurements is reasonably good.

As an example of the use of Figure 3-2, suppose the Equation (2-6) has been used to estimate a PM-10 emission factor of 2.0 kg/VKT. Further, suppose that starting on May 1, the road is treated with 0.25 gal/yd^2 of a (1 part chemical to 5 parts water) solution on the first of each month until October. In this instance, the following average controlled emission factors are found:

Period	Ground inventory, gal/yd^2	Average control efficiency, percent[a]	Average controlled emission factor, kg/VKT
May	0.042	0	2.0
June	0.083	68	0.64
July	0.12	75	0.50
August	0.17	82	0.36
September	0.21	88	0.24

[a] From Figure 3-1; zero efficiency assigned if ground inventory is less than 0.05 gal/yd^2.

In formulating dust control plans for chemical dust suppressants, additional topics must be considered. These are briefly discussed below.

3.2.3.2.1 Use of Paved Road Controls on Chemically Treated Unpaved Roads--Repeated use of chemical dust suppressants tend, over time, to form fairly impervious surfaces on unpaved roads. The resulting surface may permit the use of paved road cleaning techniques to reduce aggregate loading due to spillage and track-

on. A field program conducted tests on surfaces that had been flushed and vacuumed 3 days earlier (Muleski and Cowherd, 1987). (The surfaces themselves had last been chemically treated 70 days before.) Control efficiency values of 90 percent or more (based on the uncontrolled emission factor of the unpaved roads) were found for each particulate size fraction considered.

The use of paved road techniques for "housekeeping" purposes would appear to have the benefits of both high control (referenced to an uncontrolled unpaved road) and potentially relatively low cost (compared to follow-up chemical applications). Generally, it is recommended that these methods not be employed until the ground inventory exceeds approximately 0.2 gal/yd^2 (0.9 L/m^2). Plant personnel should, of course, first examine the use of paved road techniques on chemically-treated surfaces in limited areas prior to implementing a full-scale program.

3.2.3.2.2 Minimum Reapplication Frequency--Because unpaved roads in industry are often used for the movement of materials and are often surrounded by additional unpaved travel areas, spillage and carryout onto the chemically treated road required periodic "housekeeping" activities. In addition, gradual abrasion of the treated surface by traffic will result in loose material on the surface which should be controlled.

It is recommended that at least dilute reapplications be employed every month to control loose surface material unless paved road control techniques are used (as described above). More frequent reapplications would be required if spillage and track-on pose particular problems for a road.

3.2.3.2.3 Weather Considerations--Roads generally have higher moisture contents during cooler periods due to decreased evaporation. Small increases in surface moisture may result in large increases in control efficiency (as referenced to the dry

summertime conditions inherent in the AP-42 unpaved road predictive equation). In addition, application of chemical dust suppressants during cooler periods of the year may be inadvisable for traffic safety reasons.

Weather-related application schedules should be considered prior to implementing any control program. Responsible parties and regulatory agency personnel should work closely in making this joint determination.

Compared to the other open dust sources discussed in this manual, there is a wealth of cost information available for chemical dust suppressants on unpaved roads. Note that many salt products are delivered and applied by the same truck. For those products, costs are easily obtained by contacting a local distributor.

3.3 STORAGE PILES

The control techniques applicable to storage piles fall into distinct categories as related to materials handling operations (including traffic around piles) and wind erosion. In both cases, the control can be achieved by: (a) source extent reduction, (b) source improvement related to work practices and transfer equipment (load-in and load-out operations), and (c) surface treatment. These control options are summarized in Table 3-6. The efficiency of these controls ties back to the emission factor relationships presented earlier in this section.

In most cases, good work practices which confine freshly exposed material provide substantial opportunities for emission reduction without the need for investment in a control application program. For example, pile activity, loading and unloading, can be confined to leeward (downwind) side of the pile. This statement also applies to areas around the pile as well as the pile itself. In particular, spillage of material caused by pile load-out and maintenance equipment can add a large

APPENDIX B

13.2.2 Unpaved Roads

13.2.2.1 General

When a vehicle travels an unpaved road, the force of the wheels on the road surface causes pulverization of surface material. Particles are lifted and dropped from the rolling wheels, and the road surface is exposed to strong air currents in turbulent shear with the surface. The turbulent wake behind the vehicle continues to act on the road surface after the vehicle has passed.

The particulate emission factors presented in the previous draft version of this section of AP-42, dated October 2001, implicitly included the emissions from vehicles in the form of exhaust, brake wear, and tire wear as well as resuspended road surface material[25]. EPA included these sources in the emission factor equation for unpaved public roads (equation 1b in this section) since the field testing data used to develop the equation included both the direct emissions from vehicles and emissions from resuspension of road dust.

This version of the unpaved public road emission factor equation only estimates particulate emissions from resuspended road surface material [23, 26]. The particulate emissions from vehicle exhaust, brake wear, and tire wear are now estimated separately using EPA's MOBILE6.2 [24]. This approach eliminates the possibility of double counting emissions. Double counting results when employing the previous version of the emission factor equation in this section and MOBILE6.2 to estimate particulate emissions from vehicle traffic on unpaved public roads. It also incorporates the decrease in exhaust emissions that has occurred since the unpaved public road emission factor equation was developed. The previous version of the unpaved public road emission factor equation includes estimates of emissions from exhaust, brake wear, and tire wear based on emission rates for vehicles in the 1980 calendar year fleet. The amount of PM released from vehicle exhaust has decreased since 1980 due to lower new vehicle emission standards and changes in fuel characteristics.

13.2.2.2 Emissions Calculation And Correction Parameters[1-6]

The quantity of dust emissions from a given segment of unpaved road varies linearly with the volume of traffic. Field investigations also have shown that emissions depend on source parameters that characterize the condition of a particular road and the associated vehicle traffic. Characterization of these source parameters allow for "correction" of emission estimates to specific road and traffic conditions present on public and industrial roadways.

Dust emissions from unpaved roads have been found to vary directly with the fraction of silt (particles smaller than 75 micrometers [μm] in diameter) in the road surface materials.[1] The silt fraction is determined by measuring the proportion of loose dry surface dust that passes a 200-mesh screen, using the ASTM-C-136 method. A summary of this method is contained in Appendix C of AP-42. Table 13.2.2-1 summarizes measured silt values for industrial unpaved roads. Table 13.2.2-2 summarizes measured silt values for public unpaved roads. It should be noted that the ranges of silt content vary over two orders of magnitude. Therefore, the use of data from this table can potentially introduce considerable error. Use of this data is strongly discouraged when it is feasible to obtain locally gathered data.

Since the silt content of a rural dirt road will vary with geographic location, it should be measured for use in projecting emissions. As a conservative approximation, the silt content of the parent soil in the area can be used. Tests, however, show that road silt content is normally lower than in the surrounding parent soil, because the fines are continually removed by the vehicle traffic, leaving a higher percentage of coarse particles.

Other variables are important in addition to the silt content of the road surface material. For example, at industrial sites, where haul trucks and other heavy equipment are common, emissions are highly correlated with vehicle weight. On the other hand, there is far less variability in the weights of cars and pickup trucks that commonly travel publicly accessible unpaved roads throughout the United States. For those roads, the moisture content of the road surface material may be more dominant in determining differences in emission levels between, for example a hot, desert environment and a cool, moist location.

The PM-10 and TSP emission factors presented below are the outcomes from stepwise linear regressions of field emission test results of vehicles traveling over unpaved surfaces. Due to a limited amount of information available for PM-2.5, the expression for that particle size range has been scaled against the result for PM-10. Consequently, the quality rating for the PM-2.5 factor is lower than that for the PM-10 expression.

Table 13.2.2-1. TYPICAL SILT CONTENT VALUES OF SURFACE MATERIAL ON INDUSTRIAL UNPAVED ROADS[a]

Industry	Road Use Or Surface Material	Plant Sites	No. Of Samples	Silt Content (%)	
				Range	Mean
Copper smelting	Plant road	1	3	16 - 19	17
Iron and steel production	Plant road	19	135	0.2 - 19	6.0
Sand and gravel processing	Plant road	1	3	4.1 - 6.0	4.8
	Material storage area	1	1	-	7.1
Stone quarrying and processing	Plant road	2	10	2.4 - 16	10
	Haul road to/from pit	4	20	5.0-15	8.3
Taconite mining and processing	Service road	1	8	2.4 - 7.1	4.3
	Haul road to/from pit	1	12	3.9 - 9.7	5.8
Western surface coal mining	Haul road to/from pit	3	21	2.8 - 18	8.4
	Plant road	2	2	4.9 - 5.3	5.1
	Scraper route	3	10	7.2 - 25	17
	Haul road (freshly graded)	2	5	18 - 29	24
Construction sites	Scraper routes	7	20	0.56-23	8.5
Lumber sawmills	Log yards	2	2	4.8-12	8.4
Municipal solid waste landfills	Disposal routes	4	20	2.2 - 21	6.4

[a]References 1,5-15.

The following empirical expressions may be used to estimate the quantity in pounds (lb) of size-specific particulate emissions from an unpaved road, per vehicle mile traveled (VMT):

For vehicles traveling on unpaved surfaces at industrial sites, emissions are estimated from the following equation:

$$E = k\,(s/12)^a (W/3)^b \quad (1a)$$

and, for vehicles traveling on publicly accessible roads, dominated by light duty vehicles, emissions may be estimated from the following:

$$E = \frac{k\,(s/12)^a (S/30)^d}{(M/0.5)^c} - C \quad (1b)$$

where k, a, b, c and d are empirical constants (Reference 6) given below and

E = size-specific emission factor (lb/VMT)
s = surface material silt content (%)
W = mean vehicle weight (tons)
M = surface material moisture content (%)
S = mean vehicle speed (mph)
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

The source characteristics s, W and M are referred to as correction parameters for adjusting the emission estimates to local conditions. The metric conversion from lb/VMT to grams (g) per vehicle kilometer traveled (VKT) is as follows:

1 lb/VMT = 281.9 g/VKT

The constants for Equations 1a and 1b based on the stated aerodynamic particle sizes are shown in Tables 13.2.2-2 and 13.2.2-4. The PM-2.5 particle size multipliers (k-factors) are taken from Reference 27.

Table 13.2.2-2. CONSTANTS FOR EQUATIONS 1a AND 1b

Constant	Industrial Roads (Equation 1a)			Public Roads (Equation 1b)		
	PM-2.5	PM-10	PM-30*	PM-2.5	PM-10	PM-30*
k (lb/VMT)	0.15	1.5	4.9	0.18	1.8	6.0
a	0.9	0.9	0.7	1	1	1
b	0.45	0.45	0.45	-	-	-
c	-	-	-	0.2	0.2	0.3
d	-	-	-	0.5	0.5	0.3
Quality Rating	B	B	B	B	B	B

*Assumed equivalent to total suspended particulate matter (TSP)
"-" = not used in the emission factor equation

Table 13.2.2-2 also contains the quality ratings for the various size-specific versions of Equation 1a and 1b. The equation retains the assigned quality rating, if applied within the ranges of source conditions, shown in Table 13.2.2-3, that were tested in developing the equation:

Table 13.2.2-3. RANGE OF SOURCE CONDITIONS USED IN DEVELOPING EQUATION 1a AND 1b

Emission Factor	Surface Silt Content, %	Mean Vehicle Weight		Mean Vehicle Speed		Mean No. of Wheels	Surface Moisture Content, %
		Mg	ton	km/hr	mph		
Industrial Roads (Equation 1a)	1.8-25.2	1.8-260	2-290	8-69	5-43	4-17[a]	0.03-13
Public Roads (Equation 1b)	1.8-35	1.4-2.7	1.5-3	16-88	10-55	4-4.8	0.03-13

[a] See discussion in text.

As noted earlier, the models presented as Equations 1a and 1b were developed from tests of traffic on unpaved surfaces. Unpaved roads have a hard, generally nonporous surface that usually dries quickly after a rainfall or watering, because of traffic-enhanced natural evaporation. (Factors influencing how fast a road dries are discussed in Section 13.2.2.3, below.) The quality ratings given above pertain to the mid-range of the measured source conditions for the equation. A higher mean vehicle weight and a higher than normal traffic rate may be justified when performing a worst-case analysis of emissions from unpaved roads.

The emission factors for the exhaust, brake wear and tire wear of a 1980's vehicle fleet (*C*) was obtained from EPA's MOBILE6.2 model [23]. The emission factor also varies with aerodynamic size range

as shown in Table 13.2.2-4

Table 13.2.2-4. EMISSION FACTOR FOR 1980'S VEHICLE FLEET EXHAUST, BRAKE WEAR AND TIRE WEAR

Particle Size Range[a]	*C*, Emission Factor for Exhaust, Brake Wear and Tire Wear[b] lb/VMT
$PM_{2.5}$	0.00036
PM_{10}	0.00047
PM_{30}[c]	0.00047

[a] Refers to airborne particulate matter (PM-x) with an aerodynamic diameter equal to or less than x micrometers.
[b] Units shown are pounds per vehicle mile traveled (lb/VMT).
[c] PM-30 is sometimes termed "suspendable particulate" (SP) and is often used as a surrogate for TSP.

It is important to note that the vehicle-related source conditions refer to the average weight, speed, and number of wheels for all vehicles traveling the road. For example, if 98 percent of traffic on the road are 2-ton cars and trucks while the remaining 2 percent consists of 20-ton trucks, then the mean weight is 2.4 tons. More specifically, Equations 1a and 1b are *not* intended to be used to calculate a separate emission factor for each vehicle class within a mix of traffic on a given unpaved road. That is, in the example, one should *not* determine one factor for the 2-ton vehicles and a second factor for the 20-ton trucks. Instead, only one emission factor should be calculated that represents the "fleet" average of 2.4 tons for all vehicles traveling the road.

Moreover, to retain the quality ratings when addressing a group of unpaved roads, it is necessary that reliable correction parameter values be determined for the road in question. The field and laboratory procedures for determining road surface silt and moisture contents are given in AP-42 Appendices C.1 and C.2. Vehicle-related parameters should be developed by recording visual observations of traffic. In some cases, vehicle parameters for industrial unpaved roads can be determined by reviewing maintenance records or other information sources at the facility.

In the event that site-specific values for correction parameters cannot be obtained, then default values may be used.In the absence of site-specific silt content information, an appropriate mean value from Table 13.2.2-1 may be used as a default value, but the quality rating of the equation is reduced by two letters. Because of significant differences found between different types of road surfaces and between different areas of the country, use of the default moisture content value of 0.5 percent in Equation 1b is discouraged. The quality rating should be downgraded two letters when the default moisture content value is used. (It is assumed that readers addressing industrial roads have access to the information needed to develop average vehicle information in Equation 1a for their facility.)

The effect of routine watering to control emissions from unpaved roads is discussed below in Section 13.2.2.3, “Controls”. However, all roads are subject to some natural mitigation because of rainfall and other precipitation. The Equation 1a and 1b emission factors can be extrapolated to annual

average uncontrolled conditions (but including natural mitigation) under the simplifying assumption that annual average emissions are inversely proportional to the number of days with measurable (more than 0.254 mm [0.01 inch]) precipitation:

$$E_{ext} = E\ [(365 - P)/365] \quad (2)$$

where:

E_{ext} = annual size-specific emission factor extrapolated for natural mitigation, lb/VMT

E = emission factor from Equation 1a or 1b

P = number of days in a year with at least 0.254 mm (0.01 in) of precipitation (see below)

Figure 13.2.2-1 gives the geographical distribution for the mean annual number of "wet" days for the United States.

Equation 2 provides an estimate that accounts for precipitation on an annual average basis for the purpose of inventorying emissions. It should be noted that Equation 2 does not account for differences in the temporal distributions of the rain events, the quantity of rain during any event, or the potential for the rain to evaporate from the road surface. In the event that a finer temporal and spatial resolution is desired for inventories of public unpaved roads, estimates can be based on a more complex set of assumptions. These assumptions include:

1. The moisture content of the road surface material is increased in proportion to the quantity of water added;
2. The moisture content of the road surface material is reduced in proportion to the Class A pan evaporation rate;
3. The moisture content of the road surface material is reduced in proportion to the traffic volume; and
4. The moisture content of the road surface material varies between the extremes observed in the area. The CHIEF Web site (http://www.epa.gov/ttn/chief/ap42/ch13/related/c13s02-2.html) has a file which contains a spreadsheet program for calculating emission factors which are temporally and spatially resolved. Information required for use of the spreadsheet program includes monthly Class A pan evaporation values, hourly meteorological data for precipitation, humidity and snow cover, vehicle traffic information, and road surface material information.

It is emphasized that the simple assumption underlying Equation 2 and the more complex set of assumptions underlying the use of the procedure which produces a finer temporal and spatial resolution have not been verified in any rigorous manner. For this reason, the quality ratings for either approach should be downgraded one letter from the rating that would be applied to Equation 1.

13.2.2.3 Controls[18-22]

A wide variety of options exist to control emissions from unpaved roads. Options fall into the following three groupings:

1. Vehicle restrictions that limit the speed, weight or number of vehicles on the road;

2. Surface improvement, by measures such as (a) paving or (b) adding gravel or slag to a dirt road; and
3. Surface treatment, such as watering or treatment with chemical dust suppressants.

Available control options span broad ranges in terms of cost, efficiency, and applicability. For example, traffic controls provide moderate emission reductions (often at little cost) but are difficult to enforce. Although paving is highly effective, its high initial cost is often prohibitive. Furthermore, paving is not feasible for industrial roads subject to very heavy vehicles and/or spillage of material in transport. Watering and chemical suppressants, on the other hand, are potentially applicable to most industrial roads at moderate to low costs. However, these require frequent reapplication to maintain an acceptable level of control. Chemical suppressants are generally more cost-effective than water but not in cases of temporary roads (which are common at mines, landfills, and construction sites). In summary, then, one needs to consider not only the type and volume of traffic on the road but also how long the road will be in service when developing control plans.

Vehicle restrictions. These measures seek to limit the amount and type of traffic present on the road or to lower the mean vehicle speed. For example, many industrial plants have restricted employees from driving on plant property and have instead instituted bussing programs. This eliminates emissions due to employees traveling to/from their worksites. Although the heavier average vehicle weight of the busses increases the base emission factor, the decrease in vehicle-miles-traveled results in a lower overall emission rate.

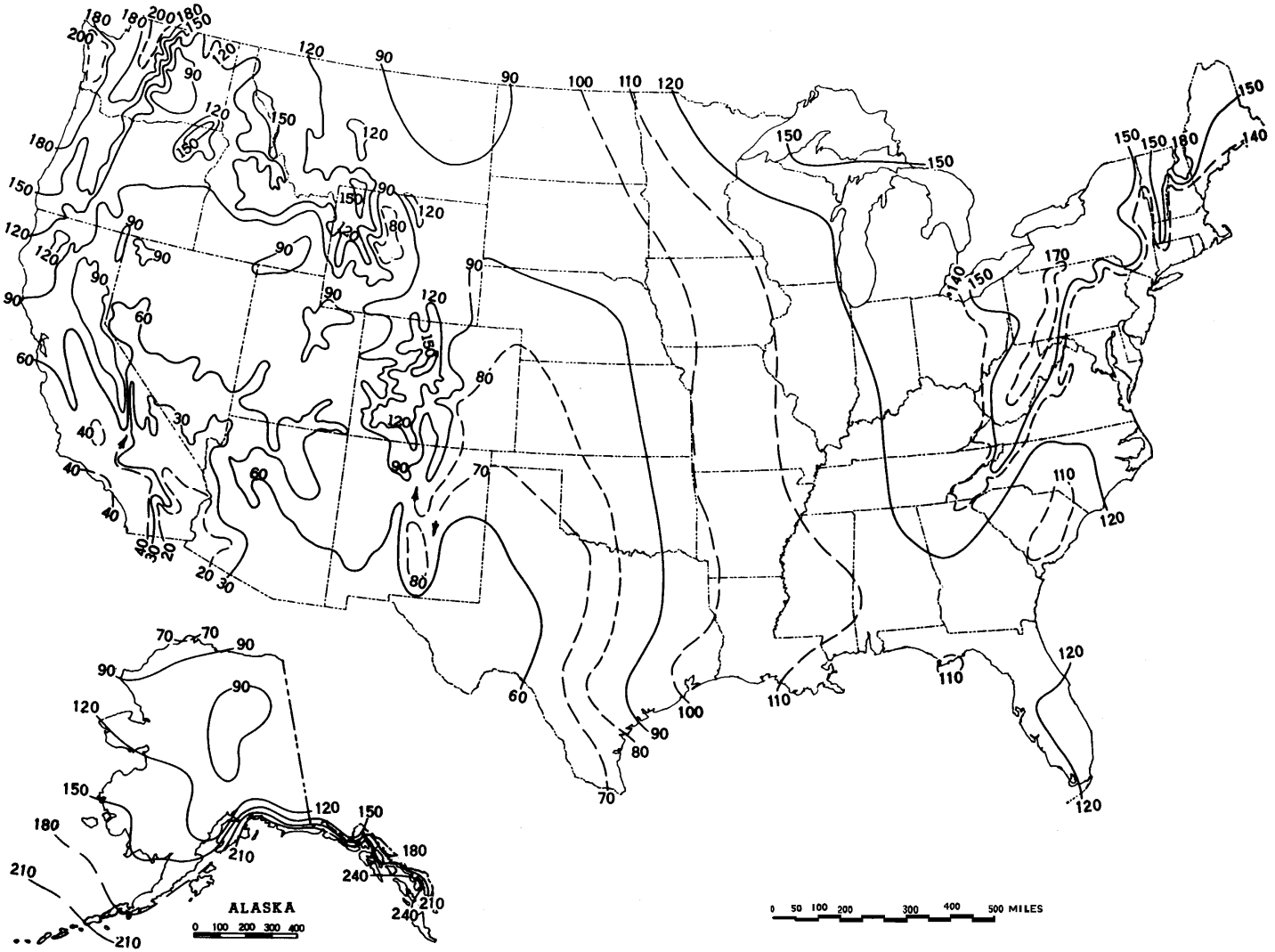


Figure 13.2.2-1. Mean number of days with 0.01 inch or more of precipitation in United States.

Surface improvements. Control options in this category alter the road surface. As opposed to the "surface treatments" discussed below, improvements are relatively "permanent" and do not require periodic retreatment.

The most obvious surface improvement is paving an unpaved road. This option is quite expensive and is probably most applicable to relatively short stretches of unpaved road with at least several hundred vehicle passes per day. Furthermore, if the newly paved road is located near unpaved areas or is used to transport material, it is essential that the control plan address routine cleaning of the newly paved road surface.

The control efficiencies achievable by paving can be estimated by comparing emission factors for unpaved and paved road conditions. The predictive emission factor equation for paved roads, given in Section 13.2.1, requires estimation of the silt loading on the traveled portion of the paved surface, which in turn depends on whether the pavement is periodically cleaned. Unless curbing is to be installed, the effects of vehicle excursion onto unpaved shoulders (berms) also must be taken into account in estimating the control efficiency of paving.

Other improvement methods cover the road surface with another material that has a lower silt content. Examples include placing gravel or slag on a dirt road. Control efficiency can be estimated by comparing the emission factors obtained using the silt contents before and after improvement. The silt content of the road surface should be determined after 3 to 6 months rather than immediately following placement. Control plans should address regular maintenance practices, such as grading, to retain larger aggregate on the traveled portion of the road.

Surface treatments refer to control options which require periodic reapplication. Treatments fall into the two main categories of (a) "wet suppression" (i. e., watering, possibly with surfactants or other additives), which keeps the road surface wet to control emissions and (b) "chemical stabilization/ treatment", which attempts to change the physical characteristics of the surface. The necessary reapplication frequency varies from several minutes for plain water under summertime conditions to several weeks or months for chemical dust suppressants.

Watering increases the moisture content, which conglomerates particles and reduces their likelihood to become suspended when vehicles pass over the surface. The control efficiency depends on how fast the road dries after water is added. This in turn depends on (a) the amount (per unit road surface area) of water added during each application; (b) the period of time between applications; (c) the weight, speed and number of vehicles traveling over the watered road during the period between applications; and (d) meteorological conditions (temperature, wind speed, cloud cover, etc.) that affect evaporation during the period.

Figure 13.2.2-2 presents a simple bilinear relationship between the instantaneous control efficiency due to watering and the resulting increase in surface moisture. The moisture ratio "M" (i.e., the x-axis in Figure 13.2.2-2) is found by dividing the surface moisture content of the watered road by the surface moisture content of the uncontrolled road. As the watered road surface dries, both the ratio M and the predicted instantaneous control efficiency (i.e., the y-axis in the figure) decrease. The figure shows that between the uncontrolled moisture content and a value twice as large, a small increase in moisture content results in a large increase in control efficiency. Beyond that, control efficiency grows slowly with increased moisture content.

Given the complicated nature of how the road dries, characterization of emissions from watered roadways is best done by collecting road surface material samples at various times between water truck passes. (Appendices C.1 and C.2 present the sampling and analysis procedures.) The moisture content measured can then be associated with a control efficiency by use of Figure 13.2.2-2. Samples that reflect average conditions during the watering cycle can take the form of either a series of samples between water applications or a single sample at the midpoint. It is essential that samples be collected during periods with active traffic on the road. Finally, because of different evaporation rates, it is recommended that samples be collected at various times during the year. If only one set of samples is to be collected, these must be collected during hot, summertime conditions.

When developing watering control plans for roads that do not yet exist, it is strongly recommended that the moisture cycle be established by sampling similar roads in the same geographic area. If the moisture cycle cannot be established by similar roads using established watering control plans, the more complex methodology used to estimate the mitigation of rainfall and other precipitation can be used to estimate the control provided by routine watering. An estimate of the maximum daytime Class A pan evaporation (based upon daily evaporation data published in the monthly Climatological Data for the state by the National Climatic Data Center) should be used to insure that adequate watering capability is available during periods of highest evaporation. The hourly precipitation values in the spreadsheet should be replaced with the equivalent inches of precipitation (where the equivalent of 1 inch of precipitation is provided by an application of 5.6 gallons of water per square yard of road). Information on the long term average annual evaporation and on the percentage that occurs between May and October was published in the Climatic Atlas (Reference 16). Figure 13.2.2-3 presents the geographical distribution for "Class A pan evaporation" throughout the United States. Figure 13.2.2-4 presents the geographical distribution of the percentage of this evaporation that occurs between May and October. The U. S. Weather Bureau Class A evaporation pan is a cylindrical metal container with a depth of 10 inches and a diameter of 48 inches. Periodic measurements are made of the changes of the water level.

The above methodology should be used only for prospective analyses and for designing watering programs for existing roadways. The quality rating of an emission factor for a watered road that is based on this methodology should be downgraded two letters. Periodic road surface samples should be collected and analyzed to verify the efficiency of the watering program.

As opposed to watering, chemical dust suppressants have much less frequent reapplication requirements. These materials suppress emissions by changing the physical characteristics of the existing road surface material. Many chemical unpaved road dust suppressants form a hardened surface that binds particles together. After several applications, a treated road often resembles a paved road except that the surface is not uniformly flat. Because the improved surface results in more grinding of small particles, the silt content of loose material on a highly controlled surface may be substantially higher than when the surface was uncontrolled. For this reason, the models presented as Equations 1a and 1b cannot be used to estimate emissions from chemically stabilized roads. Should the road be allowed to return to an

uncontrolled state with no visible signs of large-scale cementing of material, the Equation 1a and 1b emission factors could then be used to obtain conservatively high emission estimates.

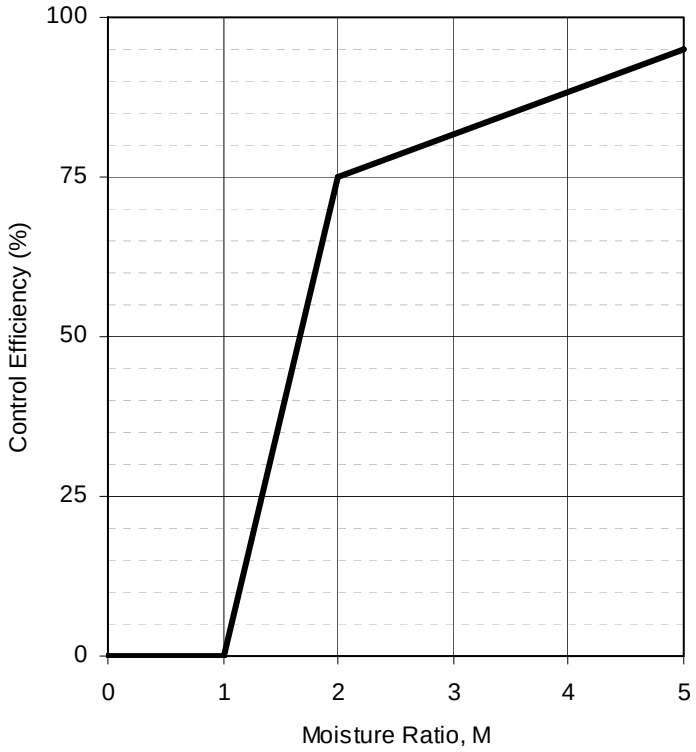


Figure 13.2.2-2. Watering control effectiveness for unpaved travel surfaces

The control effectiveness of chemical dust suppressants appears to depend on (a) the dilution rate used in the mixture; (b) the application rate (volume of solution per unit road surface area); (c) the time between applications; (d) the size, speed and amount of traffic during the period between applications; and (e) meteorological conditions (rainfall, freeze/thaw cycles, etc.) during the period. Other factors that affect the performance of dust suppressants include other traffic characteristics (e. g., cornering, track-on from unpaved areas) and road characteristics (e. g., bearing strength, grade). The variabilities in the above factors and differences between individual dust control products make the control efficiencies of chemical dust suppressants difficult to estimate. Past field testing of emissions from controlled unpaved roads has shown that chemical dust suppressants provide a PM-10 control efficiency of about 80 percent when applied at regular intervals of 2 weeks to 1 month.

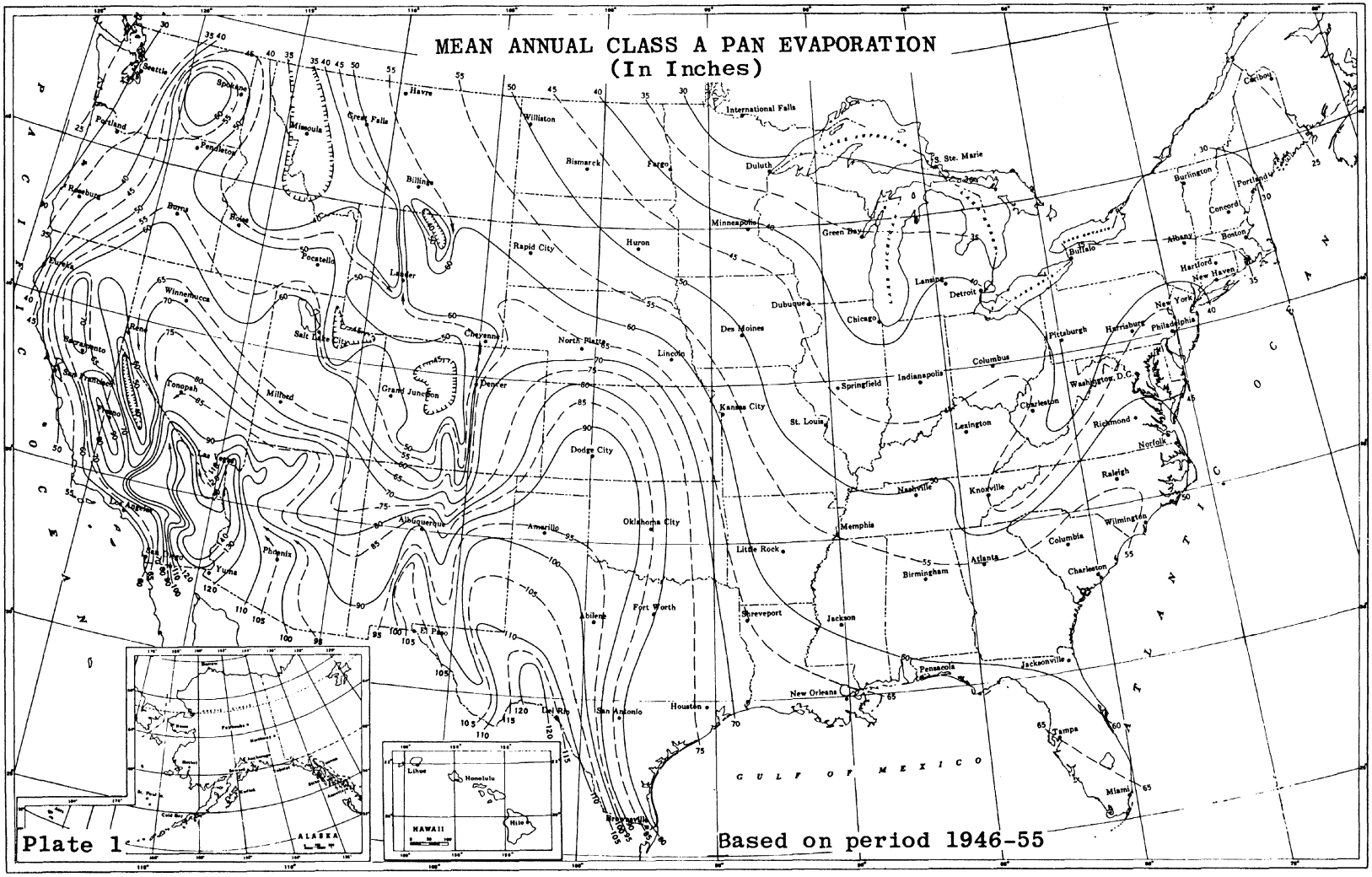


Figure 13.2.2-3. Annual evaporation data.

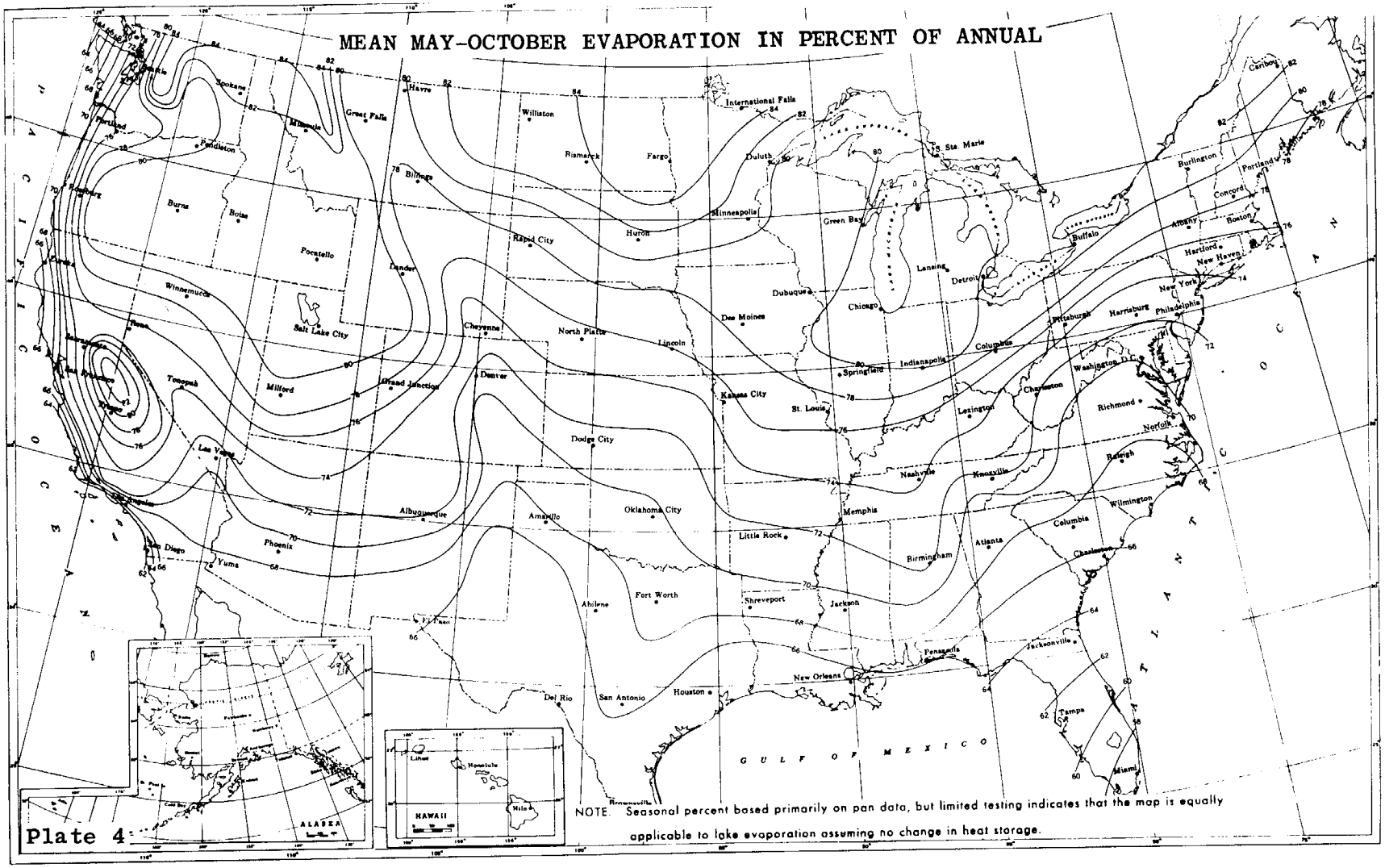


Figure 13.2.2-4. Geographical distribution of the percentage of evaporation occurring between May and October.

Petroleum resin products historically have been the dust suppressants (besides water) most widely used on industrial unpaved roads. Figure 13.2.2-5 presents a method to estimate average control efficiencies associated with petroleum resins applied to unpaved roads.[20] Several items should be noted:

1. The term "ground inventory" represents the total volume (per unit area) of petroleum resin concentrate (*not solution*) applied since the start of the dust control season.

2. Because petroleum resin products must be periodically reapplied to unpaved roads, the use of a time-averaged control efficiency value is appropriate. Figure 13.2.2-5 presents control efficiency values averaged over two common application intervals, 2 weeks and 1 month. Other application intervals will require interpolation.

3. Note that zero efficiency is assigned until the ground inventory reaches 0.05 gallon per square yard (gal/yd^2). Requiring a minimum ground inventory ensures that one must apply a reasonable amount of chemical dust suppressant to a road before claiming credit for emission control. Recall that the ground inventory refers to the amount of petroleum resin concentrate rather than the total solution.

As an example of the application of Figure 13.2.2-5, suppose that Equation 1a was used to estimate an emission factor of 7.1 lb/VMT for PM-10 from a particular road. Also, suppose that, starting on May 1, the road is treated with 0.221 gal/yd^2 of a solution (1 part petroleum resin to 5 parts water) on the first of each month through September. Then, the average controlled emission factors, shown in Table 13.2.2-5, are found.

Table 13.2-2-5. EXAMPLE OF AVERAGE CONTROLLED EMISSION FACTORS FOR SPECIFIC CONDITIONS

Period	Ground Inventory, gal/yd^2	Average Control Efficiency, %[a]	Average Controlled Emission Factor, lb/VMT
May	0.037	0	7.1
June	0.073	62	2.7
July	0.11	68	2.3
August	0.15	74	1.8
September	0.18	80	1.4

[a] From Figure 13.2.2-5, $\leq$10 µm. Zero efficiency assigned if ground inventory is less than 0.05 gal/yd^2. 1 lb/VMT = 281.9 g/VKT. 1 gal/yd^2 = 4.531 L/m^2.

Besides petroleum resins, other newer dust suppressants have also been successful in controlling emissions from unpaved roads. Specific test results for those chemicals, as well as for petroleum resins and watering, are provided in References 18 through 21.

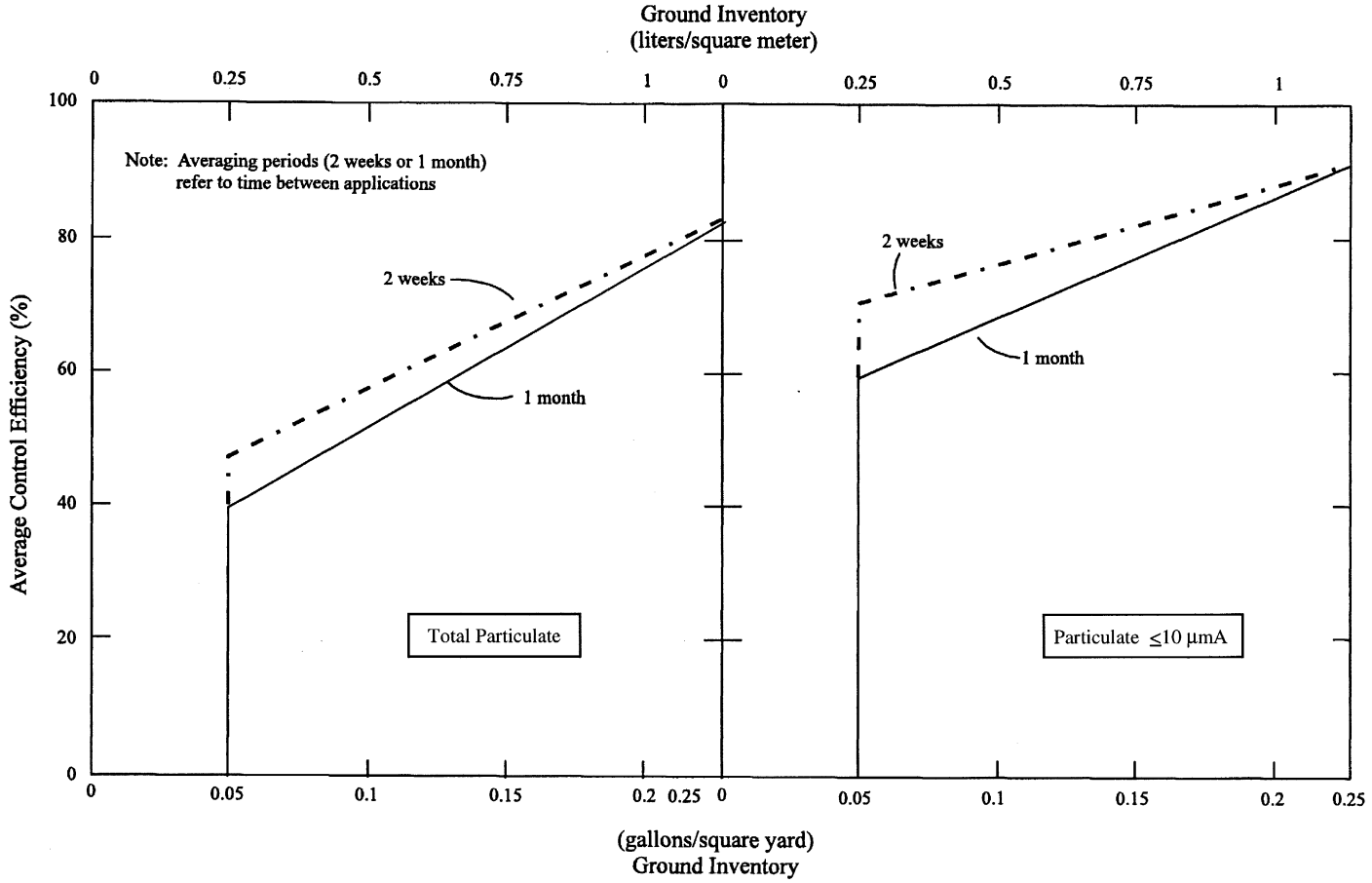


Figure 13.2.2-5. Average control efficiencies over common application intervals.

13.2.2.4 Updates Since The Fifth Edition

The Fifth Edition was released in January 1995. Revisions to this section since that date are summarized below. For further detail, consult the background report for this section (Reference 6).

October 1998 (Supplement E)– This was a major revision of this section. Significant changes to the text and the emission factor equations were made.

October 2001 – Separate emission factors for unpaved surfaces at industrial sites and publicly accessible roads were introduced. Figure 13.2.2-2 was included to provide control effectiveness estimates for watered roads.

December 2003 – The public road emission factor equation (equation 1b) was adjusted to remove the component of particulate emissions from exhaust, brake wear, and tire wear. The parameter C in the new equation varies with aerodynamic size range of the particulate matter. Table 13.2.2-4 was added to present the new coefficients.

January 2006 – The PM-2.5 particle size multipliers (i.e., factors) in Table 13.2.2-2 were modified and the quality ratings were upgraded from C to B based on the wind tunnel studies of a variety of dust emitting surface materials.

References For Section 13.2.2

1. C. Cowherd, Jr., *et al., Development Of Emission Factors For Fugitive Dust Sources*, EPA-450/3-74-037, U. S. Environmental Protection Agency, Research Triangle Park, NC, June 1974.

2. R. J. Dyck and J. J. Stukel, "Fugitive Dust Emissions From Trucks On Unpaved Roads", *Environmental Science And Technology, 10*(10):1046-1048, October 1976.

3. R. O. McCaldin and K. J. Heidel, "Particulate Emissions From Vehicle Travel Over Unpaved Roads", Presented at the 71st Annual Meeting of the Air Pollution Control Association, Houston, TX, June 1978.

4. C. Cowherd, Jr, *et al., Iron And Steel Plant Open Dust Source Fugitive Emission Evaluation*, EPA-600/2-79-013, U. S. Environmental Protection Agency, Cincinnati, OH, May 1979.

5. G. Muleski, *Unpaved Road Emission Impact*, Arizona Department of Environmental Quality, Phoenix, AZ, March 1991.

6. *Emission Factor Documentation For AP-42, Section 13.2.2, Unpaved Roads, Final Report*, Midwest Research Institute, Kansas City, MO, September 1998.

7. T. Cuscino, Jr., *et al., Taconite Mining Fugitive Emissions Study*, Minnesota Pollution Control Agency, Roseville, MN, June 1979.

8. *Improved Emission Factors For Fugitive Dust From Western Surface Coal Mining Sources*, 2 Volumes, EPA Contract No. 68-03-2924, Office of Air Quality Planning and Standards, U. S. Environmental Protection Agency, Research Triangle Park, NC.

9. T. Cuscino, Jr., *et al., Iron And Steel Plant Open Source Fugitive Emission Control Evaluation*, EPA-600/2-83-110, U. S. Environmental Protection Agency, Cincinnati, OH, October 1983.

10. *Size Specific Emission Factors For Uncontrolled Industrial And Rural Roads*, EPA Contract No. 68-02-3158, Midwest Research Institute, Kansas City, MO, September 1983.

11. C. Cowherd, Jr., and P. Englehart, *Size Specific Particulate Emission Factors For Industrial And Rural Roads*, EPA-600/7-85-038, U. S. Environmental Protection Agency, Cincinnati, OH, September 1985.

12. *PM-10 Emission Inventory Of Landfills In The Lake Calumet Area*, EPA Contract 68-02-3891, Work Assignment 30, Midwest Research Institute, Kansas City, MO, September 1987.

13. *Chicago Area Particulate Matter Emission Inventory — Sampling And Analysis*, EPA Contract No. 68-02-4395, Work Assignment 1, Midwest Research Institute, Kansas City, MO, May 1988.

14. *PM-10 Emissions Inventory Data For The Maricopa And Pima Planning Areas*, EPA Contract No. 68-02-3888, Engineering-Science, Pasadena, CA, January 1987.

15. *Oregon Fugitive Dust Emission Inventory*, EPA Contract 68-D0-0123, Midwest Research Institute, Kansas City, MO, January 1992.

16. *Climatic Atlas Of The United States*, U. S. Department Of Commerce, Washington, DC, June 1968.

17. National Climatic Data Center, *Solar And Meteorological Surface Observation Network 1961-1990*; 3 Volume CD-ROM. Asheville, NC, 1993.

18. C. Cowherd, Jr. *et al., Control Of Open Fugitive Dust Sources*, EPA-450/3-88-008, U. S. Environmental Protection Agency, Research Triangle Park, NC, September 1988.

19. G. E. Muleski, *et al., Extended Evaluation Of Unpaved Road Dust Suppressants In The Iron And Steel Industry*, EPA-600/2-84-027, U. S. Environmental Protection Agency, Cincinnati, OH, February 1984.

20. C. Cowherd, Jr., and J. S. Kinsey, *Identification, Assessment And Control Of Fugitive Particulate Emissions*, EPA-600/8-86-023, U. S. Environmental Protection Agency, Cincinnati, OH, August 1986.

21. G. E. Muleski and C. Cowherd, Jr., *Evaluation Of The Effectiveness Of Chemical Dust Suppressants On Unpaved Roads*, EPA-600/2-87-102, U. S. Environmental Protection Agency, Cincinnati, OH, November 1986.

22. *Fugitive Dust Background Document And Technical Information Document For Best Available Control Measures*, EPA-450/2-92-004, Office Of Air Quality Planning And Standards, U. S. Environmental Protection Agency, Research Triangle Park, NC, September 1992.

23. Written communication (Technical Memorandum) from P. Hemmer, E.H. Pechan & Associates, Inc., Durham, NC to B. Kuykendal, U. S. Environmental Protection Agency, Research Triangle Park, NC, August, 21, 2003.

24. MOBILE6 User Guide, United States Environmental Protection Agency, Office of Transportation and Air Quality. EPA420-R-02-028, October 2002.

25. Written communication (Technical Memorandum) from G. Muleski, Midwest Research Institute, Kansas City, MO, to B. Kuykendal, U. S. Environmental Protection Agency, Research Triangle Park, NC, Subject "Unpaved Roads", September 27, 2001.

26. Written communication (Technical Memorandum) from W. Kuykendal, U. S. Environmental Protection Agency, to File, Subject "Decisions on Final AP-42 Section 13.2.2 Unpaved Roads", November 24, 2003.

27. C. Cowherd, *Background Document for Revisions to Fine Fraction Ratios &sed for AP-42 Fugitive Dust Emission Factors*. Prepared by Midwest Research Institute for Western Governors Association, Western Regional Air Partnership, Denver, CO, February 1, 2006.

APPENDIX C

PAN EVAPORATION DATA FROM EPA-450/3-88-008

CONTROL OF OPEN FUGITIVE DUST SOURCES

SEPTEMBER 1988

APPENDIX C

PAN EVAPORATION DATA

Western Regional Climate Center

MET Tower for Tucson U Of Ariz # 1

	Average Evaporation (inches/month)
January	3.94
February	4.68
March	7.53
April	10.57
May	14.14
June	16.51
July	14.61
August	12.17
September	10.71
October	8.05
November	4.93
December	3.23
Total (in/yr) 1982-2005	111.07